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UKRAINIAN DUG-OUT DWELLINGS IN EAST CENTRAL ALBERTA

Occasional Paper
No. 11

March 1985

Andriy Nahachewsky

Alberta
CULTURE

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OCCASIONAL PAPERS

These Occasional Papers are designed to permit the rapid dissemination of information resulting from Historical Resources programmes. They are intended primarily for interested specialists, rather than as popular publications for general readers. In the interests of making information available quickly to these specialists, normal production procedures have been abbreviated.

ABSTRACT

Dug-out dwellings were used as a first temporary shelter by most Ukrainian pioneers settling in east central Alberta before the turn of the century. They were fashioned in a variety of forms the most common of which was the slanted-roof dug-out.

Dug-out structures have been known to humankind from prehistoric times. They were used on Ukrainian ethnographic territory throughout the course of history up to and including the nineteenth and twentieth centuries.

Ukrainian pioneers were forced to build their dug-outs (burdei) in extreme isolation. Construction techniques were adapted to suit the availability of building materials and to match the limited skill of the builder. The influence of non-Ukrainian architectural techniques was minimal initially but increased with time. This is evidenced in such modifications as flat roofs, hinged doors, nailed sections and metal stove components.

Dug-outs became less prominent as Alberta became more populated and other means of accommodation for settlers more readily accessible.

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Introduction

Although this study is entitled Ukrainian Dug-Out Dwellings in East Central Alberta, its subject matter includes a variety of temporary shelters built by Ukrainian pioneers in this province. Our findings have demonstrated that the excavation of a pit was not essential to these structures. The term burdei, for example, usually referred to a dug-out structure, but quite often applied to a similar structure built wholly above ground. The report title, therefore, should be understood within the context that the actual subject matter is somewhat broader in scope.

This report represents the completion of the first phase of this study, focusing on structure and land use. The second report deals with materials used in and around these structures. The context and incidence of temporary dwellings are discussed in both reports and they are conceived as being interdependent.

Chapter I of the structural and land use report deals with the phenomenon of subterranean and semi-subterranean dwellings as documented in archaeological sources. As an overview it deals with the subject in general, as well as in specific relation to Ukrainian historical and folk architecture. Other similar structures were built and used for different purposes such as vegetable storage, animal shelters and the like. The second chapter of this report deals with the historical context in which the temporary dwellings were built. The arrival to the unfamiliar and undeveloped country, the journey to the homestead, and various solutions to the problem of immediate shelter are discussed. The form of the first shelter was determined by structural models in the immigrant's mind, as well as by the specific circumstances in which he found himself.

Chapter III focuses specifically on the various temporary dwellings as constructed by these people. A typology of forms is developed and the most prevalent type is identified.

The topography and development of the land in the immediate vicinity of the shelter is discussed in Chapter IV. Chapter V, containing the most substantial data, deals with the structural components and interior plan of these dwellings, focusing on the principal, slanted roof type.

Methodology

From the outset, three major sources had been designated as potentially valuable for this study. These included published materials, oral testimony, and archaeological evidence.

Published sources on history and folk architecture provided the bulk of materials on contextual pit-houses. Various memoirs and social histories were found to contain passages describing the Albertan experiences and, occasionally, the structures themselves. Photographs and other visual materials have provided valuable information.

Field work and interviews with a variety of informants have remained the prime source for structural description of the temporary dwellings of Ukrainian pioneers in Alberta. In some cases, the informants had actually lived in such a shelter. Considering that these structures fell out of general use by the first decade of this century, only those pioneers who dwelt in them as children are likely to be alive today. The majority of these individuals are octogenarians. Secondary oral sources include older individuals who remember seeing such structures, or others who had learned of them from their parents and acquaintances.

A third envisioned source of data was to be the archaeological excavation of one or more actual dug-out sites. The exact empirical data provided by examining and measuring the remains of a structure would have provided a valuable dimension to the discussion, which otherwise deals with general descriptions and approximations. The Wasyl Pawliuk homestead (NW 32-52-15 W4) was selected on the basis of its isolation and apparent intact base. Later informants, however, suggested that the site may have been disturbed circa 1935. Archaeological evidence confirmed this suspicion and the site was closed without recording any significant data. No further excavations could be made within the time frame of this study. This report, then, is written without the supporting data of an extant model.

Each oral or published source generally provides only a fragment of the information necessary for our purposes. Material collected from oral sources is only as reliable and complete as the memory of the informant. An effort has been made to differentiate between statements in which the informant was sure of the subject and clear in his description, and those passages which remain unclear, or are later derived by the researcher.

Once collected, the data was organized into case studies. Most cases deal with one specific structure, and are identified by the surname of the occupants. An arbitrary label was assigned to those cases in which this was not possible. The case studies were analyzed for recurring or contrasting features. A typology was derived according to prominent structural characteristics. Each case study was then classified as belonging to one of four structural types: "Primitive Type," "Deep-Hole Type," "Slanted-Roof Type," or "Log-Wall Type." A fifth category titled "Unknown" was formed for those cases in which insufficient information has been collected. The Slanted-Roof Type, as shown within the text, is most frequent and most significant for our purposes. As such it is often referred to as "Principal Type."

Seventy-two cases have been documented with structural data. These comprise the bulk of the data base upon which this report is written. Various additional cases supply further contextual information. Several cases describe structures built in Saskatchewan or Manitoba. These have been included insofar as their context seems identical to that of structures located in Alberta. References to these structures is qualified with "(Sask.)" or "(Man.)". The builders of the Sawchyn and Berisina structures may actually have been of German ethnic origin. These pioneers, however, had emigrated directly from the territory of Ukraine, and in both cases, their dug-out shelters reveal marked slavic features. References to these two cases are qualified with the symbol "(Ukr?)."

Cases of dug-out dwellings as they existed in Ukraine have also been documented in the course of fieldwork. Other dug-out structures were built specifically for storage purposes and were never used as dwellings. These have also been documented and in some cases photographed.

This data sample represents the entire area of east-central Alberta, though a marked bias exists towards the district surrounding the town of Andrew. The Andrew history book, Dreams and Destinies (Lillian Semeniuk, ed., Edmonton: The Andrew Historical Society, 1980) was examined in detail as a test sample in the process of establishing contacts. The overall sample has proven sufficient to illuminate many specific features of these structures, as well as certain general tendencies in regard to incidence and frequency. Its size and the bias of the sources, however, surely limit its value for making statistical calculations.

Descriptions throughout the text are supported by endnote references to specific examples from the case studies. The surname of the interviewee is the same as that of the case study unless specifically stated in the reference.

The drawings in almost all cases have been designed by the researcher in accordance with how he conceived the informant's accounts. As such, they are reconstructions based upon sometimes fragmentary and unclear descriptions. In many cases, the liberty of assuming certain features was taken in order to consolidate their general appearance.

More detailed data is presented throughout the report in the form of tables. In these tables the following symbols are used:

x	denotes feature is present.
P	denotes feature is probably present.
?	denotes presence of feature is questionable.
-	denotes feature is specifically absent.
___	denotes feature is absent or insufficient data.

Table 1: Primitive Type

Case Name, Source, Occupancy, Nomenclature

	case name = occupant	case name ≠ occupant	Dreams and Destinies	other publication	oral information	date built	summer	winter	years occupied	occupants	Galician	Bukovynian	burdei	zemlianka	buda	liplianka	zemnyk	kempa	kolyba	iama	kopanka	khatyna
Bulavka	x			x		1899?	x			6					x							
Lackey		x			x		x			1												
Lackey, 2		x			x		x															

Table 2: Deep-Hole Type

Case Name, Source, Occupancy, Nomenclature

	case name = occupant	case name ≠ occupant	Dreams and Destinies	other publication	oral information	date built	summer	winter	years occupied	occupants	Galician	Bukovynian	burdei	zemlianka	buda	liplianka	zemnyk	kempa	kolyba	iama	kopanka	khatyna
Huculak	x		x		x		x	x	4	5		x										
Kitz	x				x	1902?	p	p	1	4	x				p							
Nimchuk	x				x	1899?	x									x				x		
Tkachuk, M.	x		x		x		x	x	4	4?		x								x		
Tokaruk	x		x		x	1898			1?	6		x	p									

Table 3: Slanted-Roof Type

Case Name, Source, Occupancy, Nomenclature

	case name = occupant	case name ≠ occupant	Dreams and Destinies	other publication	oral information	date built	summer	winter	years occupied	occupants	Galician	Bukovynian	burdei	zemlianka	buda	liplianka	zemnyk	kempa	kolyba	lama	kopanka
Archiniuk	x				x	1910?	x	x	7	8		x	x								
Bar-V-nok		x			x								x								
Berisina(?S)		x		x		1888?	x	x	1?		-	-									
Bordian	x		x		x	1898	x	x	3			x									
C.A.		x		x			x			4											
Chmilar	x					1898	x	x		9	x										
Dmyterko	x				x	1930	x	x	32	1	?	?									
Educ. Report		x		x																	
Eurchuk (S)	x			x		1903	x	x	3	9	x		x								
Harasewich	x				x	1902					x		x								
Hawreliak	x			x		1899	x	x	2?	7		x	x								
Hilkow	x				x	1900	x	x	3	2					x						
Jubilee book		x		x						4											
Kurelek, 1		?		x								?	x								
Kurelek, 2		?		x								?	x								
Kurelek, 3		?		x								?	x								
Lazhovsky	x				x	1903?	x		-	4	x				x						
Lepatsky	x				x	1914				7		x	x								
Malayko	x		x		x	1902				6										x	x
Natchuk	x				x												p				
Osinchuk	x				x	1899															
Ruptash	x				x	1901	x	x	2	6?		x	x								
Sachkiw	x				x																
Shandro, N.	x				x	1898	x	x	4	6		x	x								
Shandro, S.	x				x	1898	x	x	4?	10?		x	x								
Shemko	x		x		x	1898		x	-	4		x					x				
Socholotoski	x				x																
Svarich	x			x	x	1900	x		-	12			p	p	x						
Svarich, 2		x		x									x	x							
Zabrick		x			x							?	x								
Zazula		x			x		x	x	3			x	x								

Table 4: Log-Wall Type

Case Name, Source, Occupancy, Nomenclature

	case name = occupant	case name ≠ occupant	Dreams and Destinies	other publication	oral information	date built	summer	winter	years occupied	occupants	Galician	Bukovynian	burdei	zemlianka	buda	liplianka	zemnyk	kempa	kolyba	iama	kopanka	khatyna
Basaraba	x				x	1900	x	x	3	5		x	x									
Bodnarek	x		x			1906	x	x	6			x										
Danelesko	x		x		x					2												
Danelesko 2		x			x								p									x
Halitsky	x		x			1900	x	x	1	20?		x										
Herasym	x				x	1904				6		x	x									
Hushulak	x		x			1897	x	x	1	6												
Iwaschuk	x				x	1904	x	x	6	2	x				x							
Krawchuk		x		x																		
Kurylo	x				x						x											
Sawchyn (S)		x			x						?	?								x		
Serna	x				x							x	x									
Shipko	x				x	1914?	x	x	14?	1				x				x				
Swyschuk	x			x		1900	x	x	30?	2												
Tkachuk, P.	x				x	1901?			9?			x										
Yushko	x				x																	

Table 5: Unknown Type

Case Name, Source, Occupancy, Nomenclature

	case name = occupant	case name ≠ occupant	Dreams and Destinies	other publication	oral information	date built	summer	winter	years	occupants	Galician	Bukovynian	burdei	zemlianka	buda	khatyna	structural data	primitive type	deep-hole type	slanted-roof type	log-wall type
Achtemechuk	x		x			1900	x	x	2	4	x		x				-				
Achtymichuk	x		x			1900	x	x	2	9?		x					-				
Adamowsky (S)		x		x										x		x	x				p
Andreas	x		x			1897	x	x	6	3		x					-				
Bar-V-nok, 2			x		x								x				-				
Basilian Priests		x			x	late											-				
Bochaneskey	x		x			1898	x	x	4	4		x	x				-				
Buk		x			x												-				
CNR		x			x	1910	p		-								x				
Danelesko, 3		x			x					1							x			p	
Dugger	x		x			1898				6							-				
Ewanchuk, N.	x		x		x	1898					-	-	x			x	-				
Ewanchuk, O.	x		x		x	1898					-	-	p				-				
Ewanowich	x		x			1901				5	x						-				p
Farus	x		x			1900			1	7		x					x			p	
Filipchuk	x		x			1898			1?	5		x					-			?	
Gawryluk	x		x														-		?	?	
Gorgichuk		x			x								x				-				
Haluschak	x				x		x	x	1	1							-				
Hamaluk	x		x			1899				2?							-				
Hrudey	x		x		x	1898				9?							x			?	
Humeny	x		x			1911			1	1		x					-				
Hunka	x		x			1897			1	10	x		x				-				
Kapitski	x		x			1897				3							-				?
Kepharuk	?				x												-				
Klapatiuk	x		x			1897	x	x	3	6		x					-				
Klewchuk	x		x			1898	x	x	2	9?		x					-				
Knysh	x		x			1901					x						-				p
Koshman, A.	x		x			1912	x	x	1	2		p					-				p
Koshman, K.	x		x			1899	x	x	4	5		x	x				x				
Kostyniuk	x		x			1898				4		x					-				p
Kozak	x		x			1905				4	x						-				p

Table 5: Unknown Type (cont'd.)

Case Name, Source, Occupancy, Nomenclature

	case name = occupant	case name ≠ occupant	Dreams and Destinies	other publication	oral information	date built	summer	winter	years	occupants	Galician	Bukovynian	burdei	zemlianka	buda	khatyna	structural data	primitive type	deep-hole type	slanted-roof type	log-wall type
Kyca	x		x			1894				2?		x					-				p
Lazaruk	x		x			1901	x	x	2	2	x						x				
Lichuk	x		x			1910				5			x				x			p	
Logozar	x				x								x				x			p	
Lupaschuk	x		x			1900	x		-	10		x					-				p
Maga	x		x			1898				7		x	x				-			?	
Marianicz	x		x			1899			1	9	x		x				x				
Melenka	x		x			1898				4							x			?	?
Moisey	x		x			1899			1	6?							-				
Myshliak	x				x	1898				4					x		x			p	
Nedoshytko		x			x												-				
Nikiforuk	x		x			1896	x	x	2	1							-			?	?
Orydziuk	x		x			1916				2	x						x				p
Palamarchuk	x		x			1906				3?		x					x			p	
Pawliuk	x				x	1900	x	?	1	4	x						?				
Pawliuk, P.		x			x												x	?			
Presizniuk	x		x			1897				7		x					-				p
Ropchan	x		x			1898	x	x	2			x					-				
Ruptash	x				x												-				
Russo-Othrodox Monks		x			x	194?				1							p			p	
Skoreiko	x		x			1903						x					-				
Slemko	x			x		1904	x	x	2?	5		x	x				-				
Stratichuk	x		x			1898				6		x	x				-				
Sydor	x			x		1907				5					x		x	?		?	
Tanasichuk		x			x								x				-			-	
Tkachuk, E.	x		x			1896					x						x				p
Tomyn	x		x			1899				7	x		x				x		?	?	
Topolnicki	x		x			1900				9		x	x				x		?	?	
Topolnitsky	x		x			1896	x	x	7	3		x	x				-		?	?	
Wozymirsky	x				x		x	x	30?								x				p
Yakoweshen	x		x			1903			1	5		x					x				p
Zukiwski	x		x			1899			1	1		x					-				

Nomenclature

As demonstrated in Tables 1-5, a variety of terms is used to describe these temporary dwellings. These were once and are still today used loosely in common speech. Consequently, a variety of terms may have been used to denote identical structures, and, conversely, one term may have been indiscriminantly used to identify several different types of structures. Terms identified in scholarly and other published sources tend to be more specific and analytical. They are often quite different from those used by informants.

The term burdei (sometimes burdai) is used most commonly in reference to temporary or other substandard dwellings, usually, but not necessarily dug into the ground. The word was probably adopted around the fifteenth century from the Tatar term burdiuh, which denotes the intact skin of an animal turned inside-out and used as a container for fluids (D.I. Evarnitsky, Istoria zaporozhskykh kozakov, vol. 1, St. Petersburg: Tip I.M. Skorokhodova 1892, p. 301). Zaporozhian Cossacks extended the meaning of the word burdiuh to include their small, isolated structures built into the earth on the steppes. The word burdei evolved and eventually became part of the vernacular. It is also found in scholarly works, but more regularly encountered in the process of field work.

The term zemlianka is derived from the word zemlia - earth. A variant of the word, zemnyk or zemlyk was also affirmed. In some parts of Ukraine, the term was applied to two different types of structures. One type of zemlianka was built above ground

> . . . with regular walls and an earthen roof (plastered with clay). . . . The second type reflected its name zemlianka more literally. The walls of these structures consisted, in part, of the sides of a hole, above which the house was built. (A. Ia. Poritsky. "Pobut silskohospodarskoho proletariatu pivdnia Ukrainy kintsia XIX - pochatku XX st.," Narodna tvorchist ta etnohrafiia, no. 1 (1958), p. 61).

As a descriptive term, zemlianka is used most frequently in studies of folk architecture. Such studies often further differentiate a zemlianka and a napiv-zemlianka. In this more specific context, a zemlianka denotes a dwelling built into the earth so that all of its walls were underground and the planes of its roof sloped to ground level. A napivzemlianka or "half" zemlianka was built with a section of the vertical walls extending above the ground (M. Prykhodko, "Do pytannia pro rozvytok zhytla robitnykiv Donbasu," Narodna tvorchist ta etnohrafiia, no. 2, (1957), pp. 51-54). The roof of a napivzemlianka did not reach the ground. These terms are discussed below in Chapter III - Range of Structural Types.

The term buda or budka is related to the verb buduvaty - to build. It is a general word used to indicate any small, usually crude structure for domestic use, built to protect its contents from the elements, or as a temporary shelter for people.

"Burdei," "zemlianka," and "buda" were the most commonly used names for these temporary shelters. Oral interviews and historical literature suggest a differentiation in terminology as used by Bukovynian and Galician sources respectively. Bukovynian informants referred to their structures almost exclusively as a "burdei." Galicians, on the other hand, used "burdei" as well as the terms "zemlianka" and "buda." Table 6 indicates the relative distribution of terminology recorded in field work. The value of these figures is depreciated by the small size of the sample and certain linguistic processes in Canada: Bukovynians and Galicians come into relatively frequent contact in Alberta, and the standardized literary language has become more widespread.

Table 6: Incidence: Terminology Used by Informants

	burdei	zemlianka	buda	other	Total[68]
Bukovynian	91%(21)	0	0	9%(2)	100%(23)
Galician	53%(8)	20%(3)	26%(3)	0	100%(15)

Other terms were also recorded in the process of field work. Iama, which generally means "a hole," was used in reference to the subterranean dwellings in some cases. The term iama was also used for a simpler, but similar structure for potato storage. The word liplianka is related to the verb lipyty - to paste on, and refers to structures which are plastered with mud and clay. Khatyna is simply a diminutive of khata - house. It was used only in reference to a larger and more solid dug-out dwelling.

Kolyba is a term used for a summer shack built by shepherds and woodcutters in the Carpathian mountains. Its use has also been extended to the crude dwelling in Canada. Kopanka and kopalnytsia are derived from the Ukrainian verb kopaty - to dig, referring to the excavation made for these structures. Kempa seems to have been derived from the English word "camp." It was used by an informant who had worked on various work gangs in Canada, and probably refers to the work camps associated with railroad construction or possibly mining. The latter three terms do not have precedents in literature in Ukraine (as determined by the ten volume Slovnyk ukrainskoi movy, Kiev, Naukova Dumka, 1970) and have been coined in Canada.

The terms kaiuta and hadiuchnyk are found in published sources dealing with similar structures in southern and eastern Ukraine (Prykhodko, "Do pytannia," and Poritsky, "Pobut," respectively.) Kaiuta is generally translated as "cabin," associated often with the sleeping quarters in a ship. Hadiuchnyk in its more common context means "snake pit." These terms have not been identified in field work in Alberta.

The "Modified Library of Congress transliteration system" is used for transliteration of Ukrainian and other Cyrillic words. In this system, burdei represents the singular as well as the plural spelling for this word. In other words, such as zemlianka, the plural is differentiated usually by a word-final "y" as in zemlianky.

Chapter I: Architectural Context

Chapter I: Architectural Context

A. Pit Houses in Archaeology

Pit house dwellings have been known to mankind virtually for thousands of years. The earliest known pit house, located in Campigny, France, dates back to the Mesolithic period, circa 10,000 B.C.[1] The use of pit houses has not been limited to the terrain of present-day Europe. Although most common in areas having a temperate climate with cold winters, pit houses have been used across the globe.

In Ukraine, the earliest traces of a pit house (zemlianka) date to the Paleolithic era (40,000 to 12,000) years ago.[2] Pit houses were known in the Neolithic period and were used widely by the inhabitants of the Trypilian culture. Pit houses and semi-pit dwellings (napivzemlianky) were constructed on Ukrainian ethnographic territory by early Slavic civilizations, and were in wide use in Ukraine to the eleventh and twelveth centuries.[3] The Cossacks of the seventeenth and eighteenth centuries termed their dug-out dwellings burdiuhy and lived in them both on their settlement (Sich) and in the open field (pole). In modern history, the zemlianka was employed as a means of shelter for nineteenth-century industrial workers. It was still widely utilized in the early part of this century by fishermen, lumberjacks, and other labourers who earned their livelihood in isolated settings far removed from their home dwellings. Moreover, zemlianky and napivzemlianky have consistently served as an alternative dwelling place for the destitute.

It is necessary to note that in addition to forming the architectural base for a dwelling place, pits, or dug-out structures, have also been used as storage areas for grain, potatoes and other products. The Trypilians used pits for storage, as did Slavs in the tenth century, Hutsuls and other Ukrainians in this century.

Before examining in detail the various aspects of pit house dwellings common to Ukrainian folk architecture, it would be instrumental to first establish a general framework and to define our terms of reference regarding the study of pit houses.

In anthropological terms, the construction of a pit house involves the technique of sinking the floor of a house into the ground and building a superstructure above it. This semi-subterranean dwelling is used because it offers definite advantages where alternate housing is either unavailable or inconceivable; such is the case in primitive cultures and in circumstances necessitating temporary living quarters where harsh climatic conditions are a factor. The advantages of pit houses are clear: (i) they are easy to keep warm; and (ii) they afford much room to the occupant without his having to erect high walls.[4] In addition to these factors pit houses are almost always constructed of materials taken from the immediate environment that do not require complicated treatment or preparation. Finally, if well constructed and maintained a pit house will last for many years.

As mentioned above, the first known pit houses were discovered in the Campigny region of France and date back to the Mezolithic period. In appearance these early structures resembled a shallow pit covered by a half-domed superstructure.[5] In more recent years, 1804-1806, pit houses used by primitive tribes inhabiting the Palles area of the Columbia River were described by the explorers M. Lewis and W. Clark in this manner:

> They are sunk about eight feet deep and covered with strong timbers, and several feet of earth in a conical form. On descending by means of a ladder through a hole in the top, which answers the double purpose of a door and a chimney, we found that the house consisted of a single room clearly circular and about sixteen feet in diameter.[6]

A somewhat later description of pit houses found on another continent, those of the Samayed tribes of Siberia, provides a near parallel depiction:

> They lived in little, half underground lodges, with circular upper parts and without windows. In the middle of the latter there is a hole, through which smoke and people pass.[7]

Thus, despite differences in geographic setting and historical epoch, we find that pit dwellings share certain features.

It is useful to review a summary of architectural features of pit houses and to compare these features with those commonly associated with the zemlianka. The main architectural features of pit houses can be classified under the following headings: orientation--the direction in which the front of a dwelling is oriented; shape--usually rectangular, round, or D-shaped (i.e., the front wall is built to stand straighter than the other walls); size--ranging from 9-33 sq m, with an average of 18 sq m, exclusive of bench areas, antechambers, etc.; depth--falling into four categories (i) shallow (under .74 m), (ii) medium (.75-1.29 m), (iii) deep (1.30-2.00 m), (iv) very deep (more than 2.00 m); walls--lower (subterranean) and upper walls--their construction and support; floors--sand and clay plastered, or barren; benches--their position, size and purpose; roof construction--its support and materials for construction; partition--its purpose and construction; bins--holes used for storage; fireplaces--their size, number and position; deflectors--their position and purpose; ash pits--their number and purpose; heating pits--their size, number and purpose; storage pits in floor--larger bins used for storage; other floor holes--their frequency and purpose; metates--number and position, and passage entrances, antechambers and ventilators--their existence and construction.[8]

These architectural features, common to most pit houses, were contained in dug-out structures common to Ukrainian folk architecture. Some of these features however, are more prevalent than others. For example the D-shaped pit house was not common to, if not totally absent from, Ukrainian folk architecture. Most zemlianky were constructed in a rectangular, round, or oval shape. Also very common to Ukrainian folk architecture was a modification of the

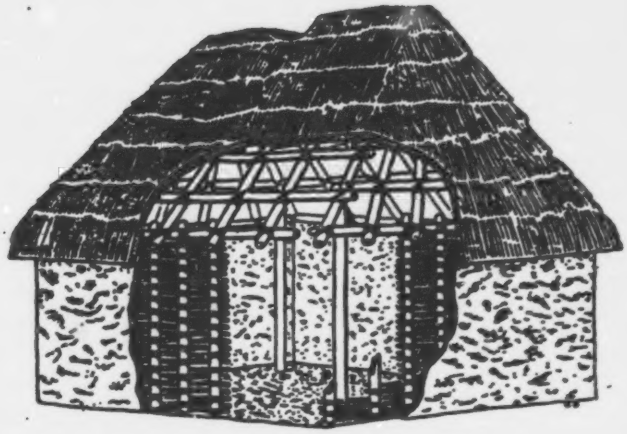

Figure 1: Construction of a rectangular, gable-roofed house with mud-on-wattle walls of the prehistoric Middle Mississippi Indians. (Figure 12-4 in E. Adamson Hoebel, Anthropology: The Study of Man. New York: McGraw-Hill Inc., 1958, p. 255.).

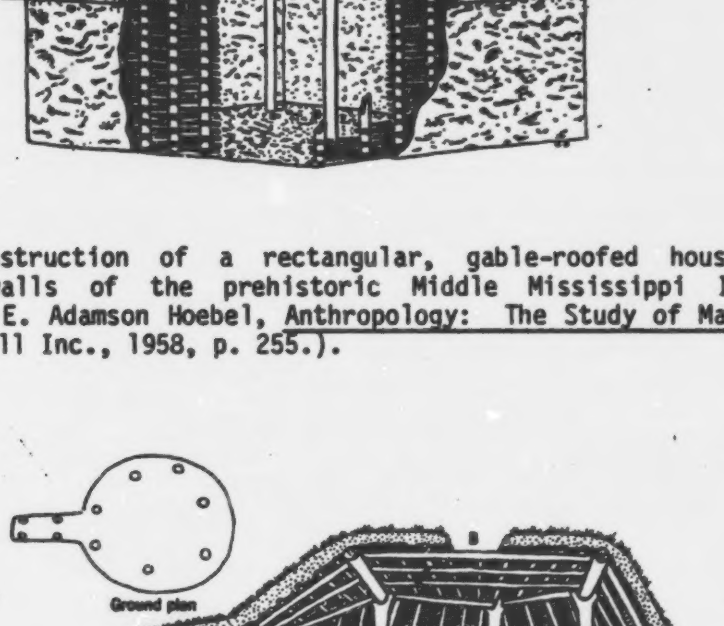

Figure 2: Cross section and ground plan of a prehistoric Mongollen pit dwelling: A, entrance; B, smoke hole; C, excavated earth wall. (Figure 12-6 in Hoebel, Anthropology, p. 256.)

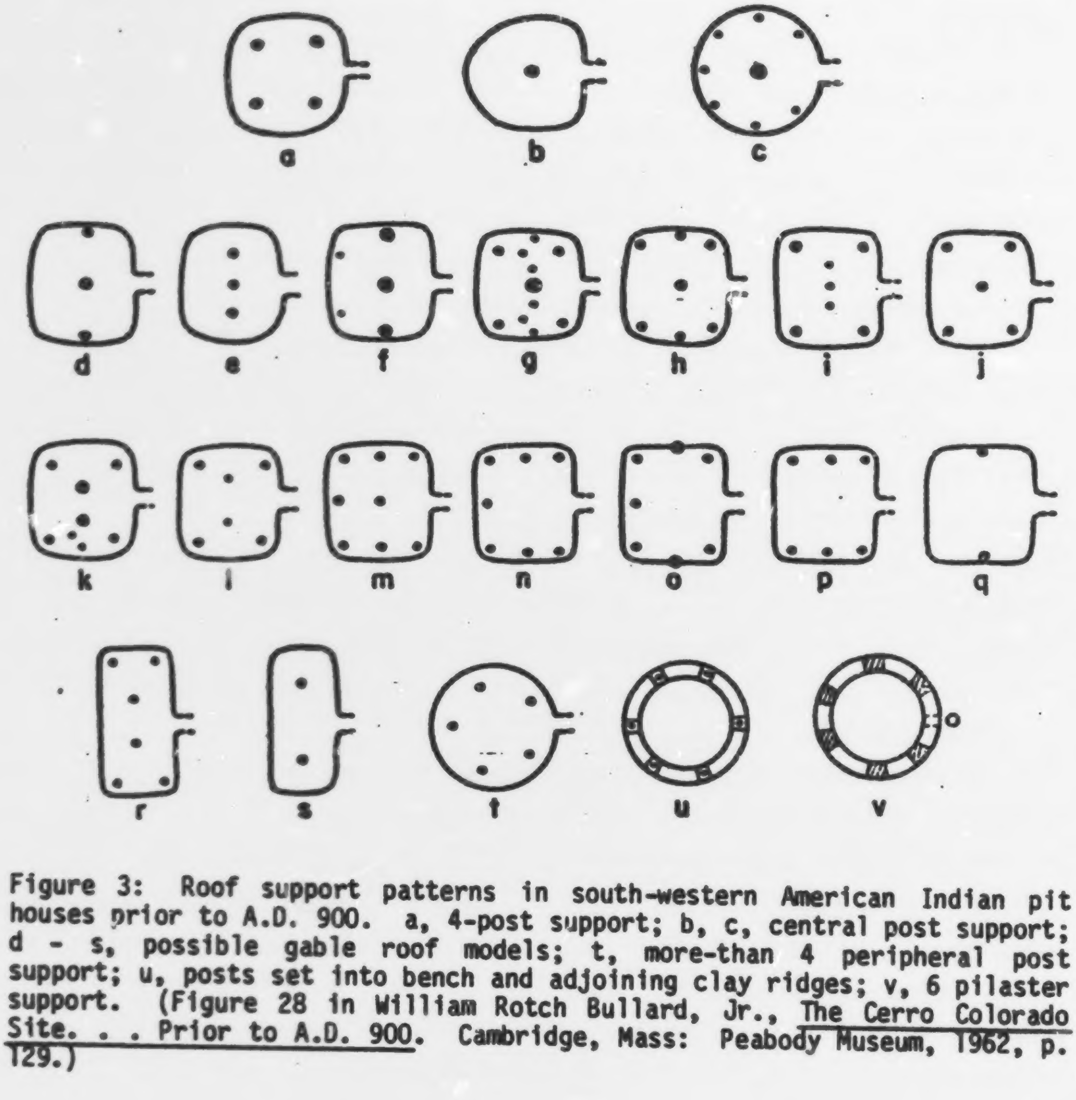

Figure 3: Roof support patterns in south-western American Indian pit houses prior to A.D. 900. a, 4-post support; b, c, central post support; d - s, possible gable roof models; t, more-than 4 peripheral post support; u, posts set into bench and adjoining clay ridges; v, 6 pilaster support. (Figure 28 in William Rotch Bullard, Jr., The Cerro Colorado Site. . . Prior to A.D. 900. Cambridge, Mass: Peabody Museum, 1962, p. 129.)

zemlianka, the napivzemlianka. Napivzemlianky consisted either of a very shallow pit base, or only a partial pit base, the remainder of the floor being at ground level. Often a napivzemlianka was dug out of a river embankment or out of the side of a hill, thus only part of its base was burrowed into the ground. In almost all zemlianky and napivzemlianky, floors, if plastered, were done so in clay. Partitions were not as common to the Ukrainian pit house as in other areas. Although two and three-room pit houses did exist, by far the most common was the one-room variant. As well, deflectors for the purpose of shielding fireplaces from drafts were not common to Ukrainian folk architecture.

This general overview of pit house architectural features provides us with a framework within which to examine the dug-out dwellings of Ukraine. Dug-outs will be discussed in terms of their architectural features and in terms of their functional purpose within a given historical and socio-economic context.

The earliest forms of pit houses found on Ukrainian ethnographic territory date to the upper Paleolithic period some 25,000-30,000 years ago. A napivzemlianka, discovered in the Desna River region, measured 12 x 4 m in size and contained segments of flintstone and bone believed to have been used in the construction of walls and roof. The interior contained three fire pits evenly spaced apart and divided by small round holes 10 cm in diameter. The latter would have held poles to support the roof. Flint spearheads used in hunting were also found here.[9]

The zemlianka of the upper Paleolithic period was round in form with a roof made of poles and covered with earth. Some of these pit houses measured up to 34.5 sq m in size and 3 m in depth. They appear to have housed large numbers of people and may have been organized into segregated male and female dwellings.[10]

Zemlianky were also known in the ancient cities of the northern Prychornomoria area (near the Black Sea). As early as the seventh century B.C. Greek settlements appeared in this vicinity. One particularly industrious Greek colony was located on Berezan Island. Because of the excellent fishing provided by the environs of this island, it drew many tradesmen and fishermen to settle on its temperate shores.

Zemlianky were used as temporary shelters for these newcomers and as seasonal abodes for fishermen coming to work in the prosperous Berezan colony.[11]

In the Neolithic era 5,000-3,000 B.C., the zemlianka and napivzemlianka appear to have been common dwelling places, although measuring smaller in size than their Paleolithic predecessors. This does not necessarily apply to the napivzemlianky of the Trypilian culture, which flourished in this epoch. It was not uncommon for Trypilian napivzemlianky to have measured up to 100 sq m and to have housed whole clans.[12]

The Trypilian culture existed during the Copper Age and represents one of the most highly evolved ancient civilizations. It evolved from the fourth to the third centuries B.C. and can be divided into three periods: early--first half of the fourth century B.C.; middle--second half of the fourth century and the early part of the third century B.C.; and late--middle to late third century B.C.[13] During these periods the culture thrived in various regions of Ukraine. The settlements of early Trypilia were located in the Prut uplands and central Dnieper. They spread west almost to Kamianets Podilske, and south to the Dniester River and the central Boh River. Middle Trypilian settlements were located on almost all of the territory of Right-Bank Ukraine with the exception of the far-most southern regions. In migrating eastward it appears that the inhabitants passed north of present-day Kiev to settle on the Left-Bank. In late Trypilia, settlements spread throughout upper and middle Podnistrovia, the upper and central tributaries of the Buh River, and southern Polissia (Dniester River area).[14]

The dwellings of the early Trypilian period were mainly zemlianky and napivzemlianky. Zemlianky were oval in form, 5-6 m in diameter, and 0.7-1.5 m deep. Although these dimensions were average, exceptions did occur. In Bernovo-Lutsi, for example, zemlianky measured very deep--up to 3 m. A rectangular napivzemlianka of 130 sq m was discovered in Luka-Vrublivetske.[15] However, the typical settlement of early Trypilia, found most often in low lying lands of tributaries or on river terraces, consisted of eight to ten round zemlianky or napivzemlianky.

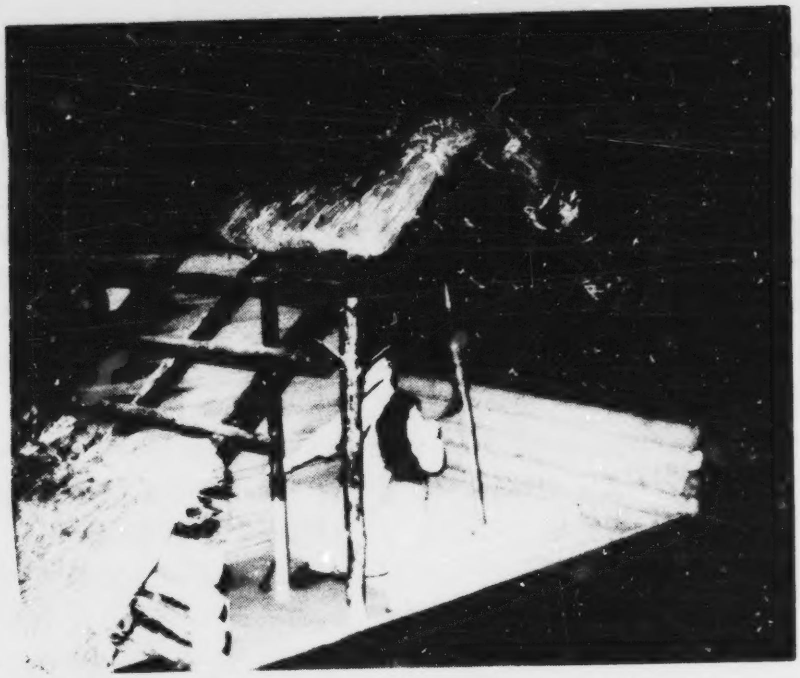

Figure 4: Reconstruction of Trypilian pit house. Ternopilskyi Kraieznavchyi Muzei, Ternopil, Ukraine. (Photograph taken in 1983 by Radomir Bilash.)

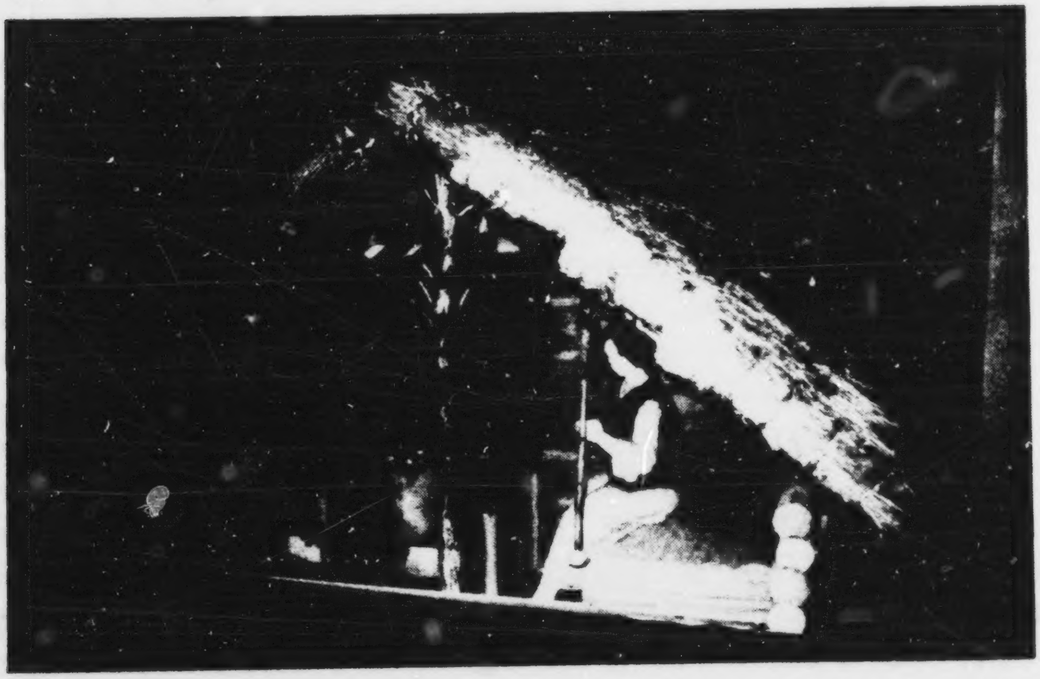

Figure 5: Reconstruction of Trypilian pit house, frontal view. Ternopilskyi Kraieznavchyi Muzei, Ternopil, Ukraine. (Photograph taken in 1983 by Radomir Bilash.)

Many of these were interconnected by underground passageways.[16]

As mentioned above, the other type of structure used in this period was the long, rectangular napivzemlianka which appears to have housed one large family. One such napivzemlianka was located at Luka-Vrublivetske and measured 45 m in length and 3 m in width. It was divided into three rooms and contained eleven fire pits spaced evenly throughout the dwelling.[17] The walls of this structure were slightly concave and the floor dropped progressively toward the center of each room but was not evenly dug out. Benches made of clay were found by the walls and stone partitions stood between rooms. Both the walls and floor of this structure were plastered with clay.[18]

The enlarged napivzemlianka developed out of the tradition of smaller zemlianky. Napivzemlianky, in turn, formed the basis for "on-ground" huts (nazemni) which prevailed in the middle Trypilian period. It was in the middle Trypilian period that the culture attained full fruition in all aspects of its development. We find that settlements were located further away from rivers in this period, lying in dry-land areas affording natural protection. Here, as many as two hundred or more clay-packed huts arranged in rows or concentric circles would form a community. Large, communal buildings were located at the center of these huts and fields surrounding them were used for meetings, games, dances, and ceremonies. At the apex of its existence, one such settlement in the Volodymyrivka area had 1,500 - 2,000 buildings.[19]

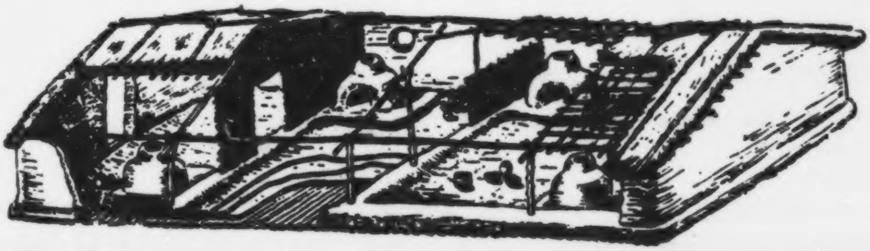

Figure 6: Concept drawing of a middle Trypilian dwelling. Note the division of living quarters intended to accommodate several families. (In S.M. Bibikov, ed., Narysy Starodavnoi istorii Ukrainskoi RSR. Kiev: Akademiia Nauk, 1957, p. 61.)

The late Trypilia period was characterized by the reappearance of the napivzemlianka. Architectural features seemed to return to an earlier simplified form. The layout of settlements remained circular or organized into rows. In addition, dwelling places became much smaller.[20]

As we have seen, the use of zemlianky and napivzemlianky in the early epochs was quite widespread. Such structures continued to be used in early Slavic societies at the dawn of the first century A.D. In the wooded-steppe areas, zemlianky were prevalent throughout the early centuries and lasted well into the eleventh and twelfth centuries as common dwelling places.[21] Early Arabic travellers described these abodes as being built of twigs and smeared with clay, and the Kievan Chronicles make little mention of early Slavic structures having wooden frames. Mostly they were built of brushwood and turf.[22]

The findings of an archeological study conducted in the Dniester uplands region show the remains of settlements dating to the second quarter of the first century A.D.[23] These settlements were located on the southern slopes of small rivers and tributaries, and in river basins. The most typical dwelling places found here were napivzemlianky (0.7 - 1.5 m deep) and zemlianky (2 m deep or more). The size of these dwellings averaged 10-20 sq m, occasionally reaching 30 sq m. In shape they were rectangular or oval, with slightly concave walls carved from the undersoil. In many of the zemlianky, steps were fashioned out of the undersoil at the entranceway. Where these were inordinately large it would appear that they doubled as sleeping places. Some zemlianky contained benches carved out of walls which were obviously intended for rest and sleep. Clay or stone ovens, and in some cases fire pits, provided heat and cooking facilities. However, many of these structures contained no fire pits whatsoever. Small holes, used to hold poles supporting the walls and roof of the structure, were dug out of the ground.[24]

A napivzemlianka dating to the sixth-seventh century uncovered in the central Dniester region demonstrates the continuity in design and function of pit houses in Ukrainian folk architecture.[25] This napivzemlianka, measuring 2.2 x 3.1 m in size and 0.6 m in depth,

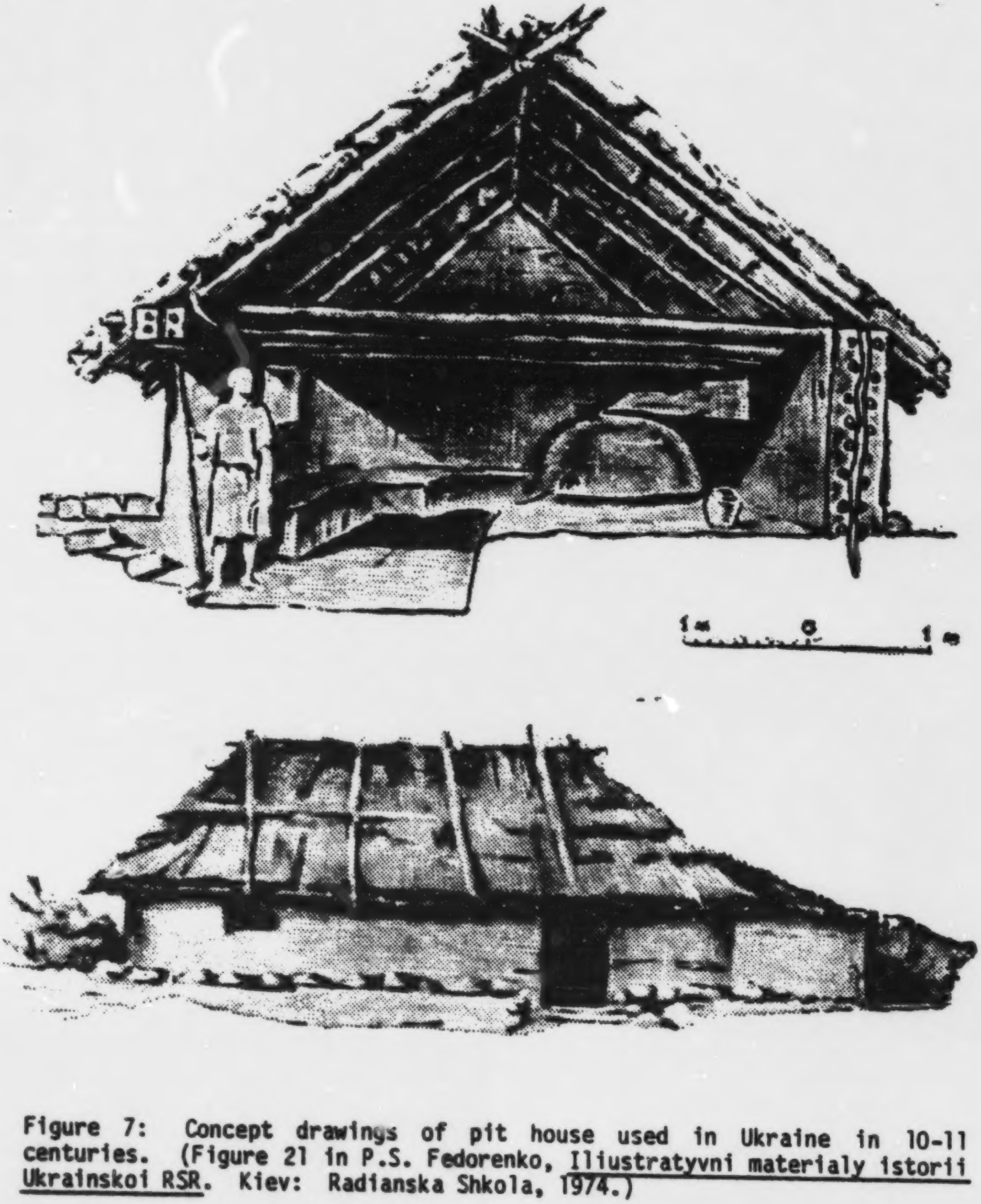

Figure 7: Concept drawings of pit house used in Ukraine in 10-11 centuries. (Figure 21 in P.S. Fedorenko, Iliustratyvni materialy istorii Ukrainskoi RSR. Kiev: Radianska Shkola, 1974.)

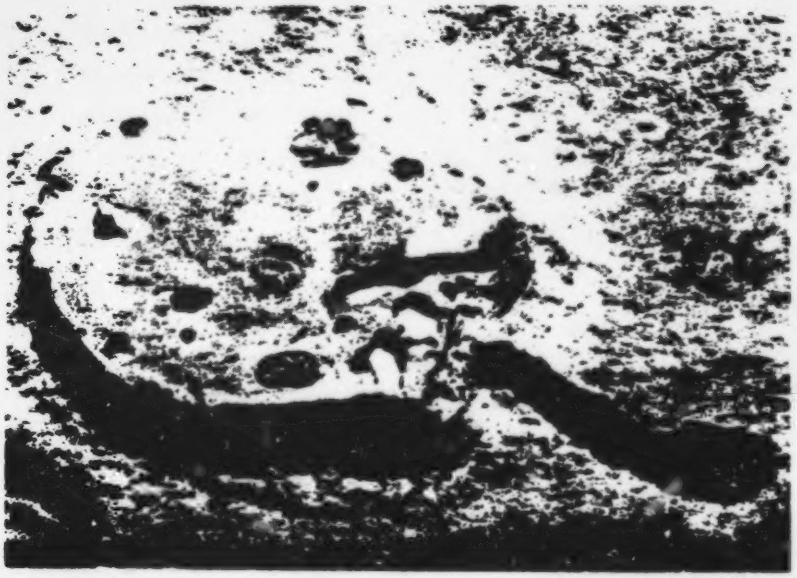

Figure 8: An uncovered pit house base at the Cerro Colorado Site in the southwestern United States pre-dating A.D. 900. (Figure 35-a in Bullard, Cerro Colorado Site.)

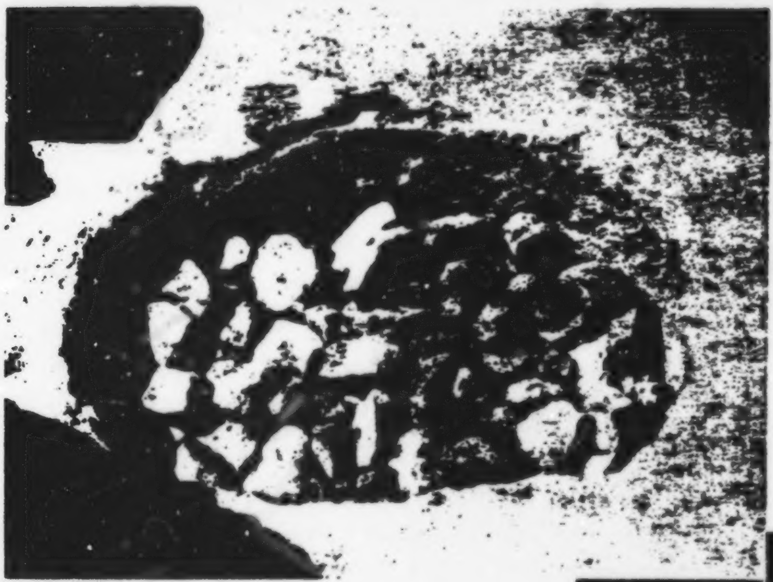

Figure 9: Detail of a heating pit from the Cerro Colorado Site. (Figure 39-b in Bullard, Cerro Colorado Site.)

Figure 10: Excavated house (napivzemliamka) at the Chervony site in the southern Brik Basin dating to the 10-11 centuries. (Figure 10 in V.I. Bidzilia, ed., Sloviano ruski starozhytnosti, Kiev: Naukova Dumka, 1969, p. 167.)

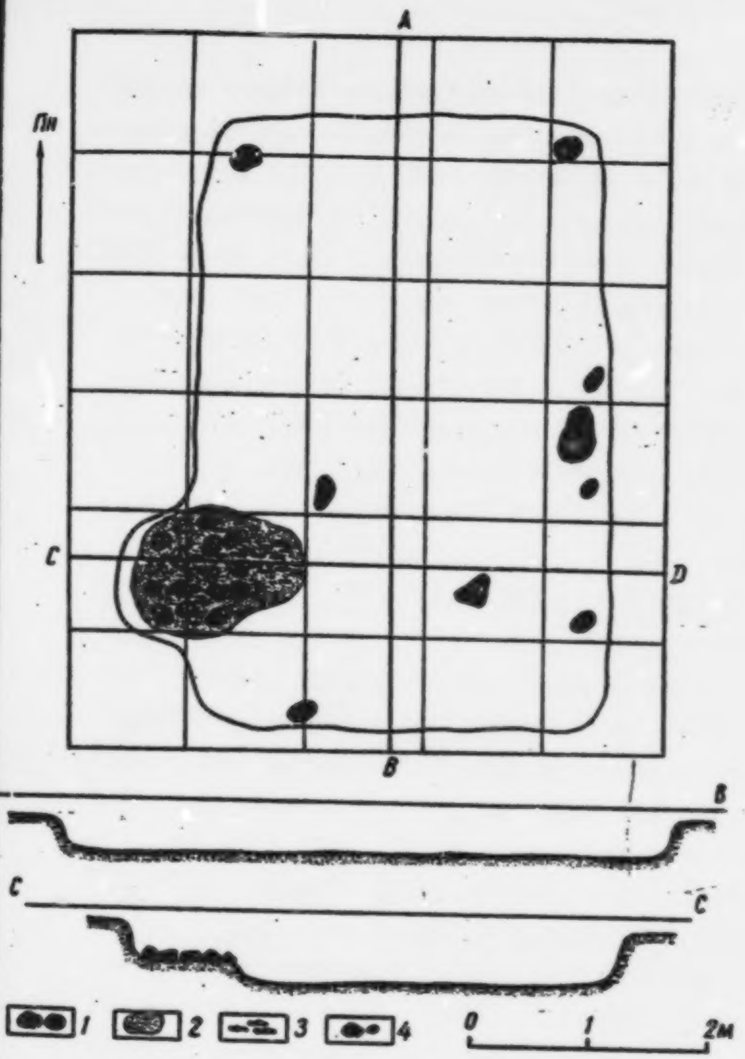
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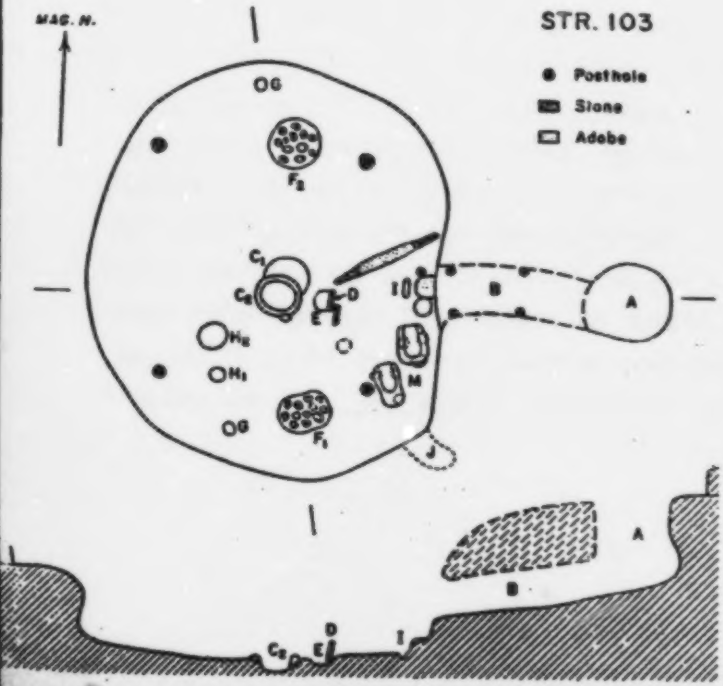
Figure 11: Plan and cross-sections of pit house (*napivzemlianka*) in the eastern Volhynia area dating to the 2-5 centuries. 1, stoves; 2, clay plaster; 3, fire pits, 4, postholes. (Figure 19 in I.S. Vynokur, *Istoriia ta Kultura Cherniakhivskykh plemen dnistro-dniprovskoho mezhyrichchia*. Kiev: *Naukova Dumka*, 1972, p. 52.)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Posthole
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C2
E
I

Figure 12: Plan and cross-sections of Cerro Colorado pit house predating A.D. 900. A, ventilater shaft; B, ventilator tunnel; C, fireplaces, D, deflector slab; E, ash pit; F, heating pits; G, secondary postholes; H, floor cists; I, clay steplike feature with adjacent posthole, slot and posthole; J; wall cist, M, metates. (Figure 10 in Bullard, *Cerro Colorado Site*, p. 22.)

contained an entrance 0.9 m wide. Its floor descended gradually toward the end wall. In one corner, a fire pit 1.3 m in diameter was located. Two holes for roof supports were found in the floor. Like its predecessors, this napivzemlianka appears to have had walls made of brushwood covered with flat stones. Other typical materials used in the construction of walls were willows plastered with clay.[26]

It is clear that aside from minor variations in architectural design and construction, pit dwellings of the early centuries of Slavic civilization altered little from ancient examples. Occasionally, fire pits were made of granite rather than clay and walls were covered with oak branches packed down with earth rather than willows smeared with clay.[27] On the whole, napivzemlianky and zemlianky did not vary significantly in the early Slavic epoch from their antecedents of the Neolithic period. It is interesting to note that pit houses described as typical of this era were all one-room dwellings, yet two-room structures were not uncommon in ninth century Priashiv.[28] Here we find the introduction of the entranceway/ antechamber (siny) as a second room. It functioned largely as a buffer against a harsh climate and for storage. In the fourteenth and fifteenth centuries, in this same region, one, two and three-room dwellings were in existence, probably indicating marked social distinctions among villagers.[29]

B. Dug-Out Dwellings in Ukrainian Folk Architecture

Pit house dwellings of a somewhat later epoch, the Hetman State (seventeenth and eighteenth centures) are known to have existed on Right-Bank Ukraine.[30] The eighteenth century historian, Opanas Shafensky, writing in the 1780s, depicted many of the village homes of southern Chernihivshchyna and Poltavshchyna (Left Bank Ukraine) as woven huts.[31] The main building materials for these huts, many of which were dug out of the ground, were interwoven willows and reeds (wattle) smeared with clay. Nor were pit houses limited to village use in this epoch.

They were widely employed by Cossacks at the Sich, on the open field, and on the winter settlement (zymovnyk).

The Cossacks used the Sich as a type of "home base" between warring campaigns. The huts, or barracks, in which they lived on the Sich were called kuriny, and their construction was similar to that of village huts of this period.[32] The kuriny were arranged in a semi-circle, each kurin a long, low, rectangular building covered with reeds and wattle smeared in clay. Cossack garrisons resided in the kuriny and from this practice derived the name of kuriny themselves.[33]

The term burdiuh was used by Cossacks to denote a very basic zemlianka. The burdiuh was a solitary dwelling place used both on the Sich,[34] and on the open field. Individual Cossacks would erect a burdiuh in an isolated setting. Burdiuhy were scattered about the uninhabited steppe. A Cossack would retreat to his burdiuh seeking respite from the stormy life of the Sich, or from the difficulties of the farmstead (khutir). Burdiuhy were crudely constructed. A pit was dug out of the ground and a wattle fence superstructure erected above it. Earth was piled up about the walls and the reed roof was smeared with clay and goat dung. Small round holes were punched out of the walls and served as windows. The windows were covered with a frame of woven bullrushes in cold weather and at night. A fire pit made of stones was used to heat the burdiuh and to cook food. Furnishings were rare, but occasionally benches, small carpets (kylymy), and even decorative pictures were brought to the burdiuh. Weapons were often hung on the walls. The burdiuh was never boarded-up or locked. Rather, it was deliberately left open and stocked with food for the use of weary travellers.[35]

Burdiuhy were also built by Cossacks residing in zymovnyky. Zymovnyky were established along rivers and in valleys and were used to house married Cossacks and their families throughout the winter months. A. Kashchenko writes of Ukrainian settlers escaping from Tsarist and Polish-ruled lands in the early 1700s and seeking refuge on zymovnyky.[36]

With the advent of industrialization in nineteenth century Ukraine, the zemlianka came into use in urban settings and by members of

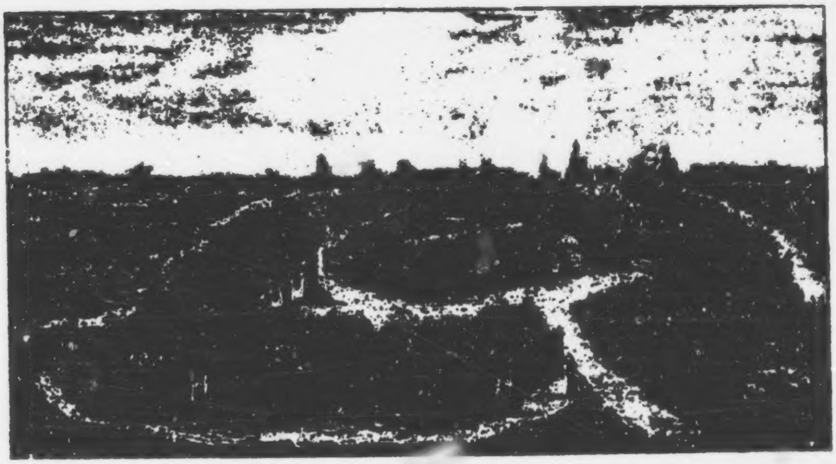


Figure 13: A Cossack winter settlement (zymovnyk) comprised of cottages, huts and dug-outs (burdiuhy). (In A. Kashchenko, Opovidannia pro slavne viisko zaporozhske nyzove. Katerynoslav: Ukrainske Vydavnytstvo v Katerynoslavi, 1923, p. 236.)

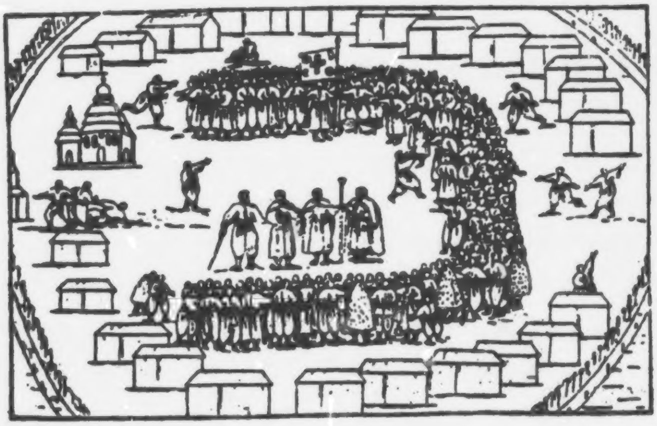


Figure 14: Concept drawing of a Cossack fortress (sich) and its living quarters (kuriny). (In Kashchenko, Opovidannia, p. 56.)

the emerging working class. The development of the naphtha and wax industry played a major role in this process. Its growth greatly accelerated in the 1860s in Western Ukraine and within a span of some twenty-five years the naphtha industry advanced from employing the most primitive mining techniques to mechanization and full entrepreneurship.[37] The rapid expansion of small mining towns in this period is best illustrated by the example of Boryslav, Galicia. Boryslav grew at a staggering rate, its population increasing almost twenty times in a span of fifty years, as illustrated by Table 7.[38]

Table 7: Boryslav Population Growth

Year	Population
1857	646
1869	5,300
1880	10,268
1890	12,059
1900	11,631
1910	12,667

Poor peasants from neighbouring villages flocked to burgeoning industrial centres such as Boryslav in the hope of supplementing their meagre farm earnings. Many came as seasonal workers. They lived in ghettos surrounding the town centres. The ghettos consisted of low wooden shanties or dilapidated barracks lacking sewage, plumbing or basic hygiene facilities. Workers slept shoulder-to-shoulder on cold, damp, earthen floors, next to walls pocked with holes.[39] The alternative to such communal workers huts were zemlianky. These became a basic type of dwelling place for industrial workers of the nineteenth century.[40]

The situation in the mines of eastern Ukraine shows marked similarities during this period. The folklore of the Donbas area is riddled with references to them in the 1870s,[41] and it is estimated that in 1906, out of 2,330 single family dwellings in Donbas, 2,208

(94.7%) were *zemlianky* or *napivzemlianky*:[42]

> *Zemlianky* were primitive in appearance; basically a hole in the ground (see Figure 15). If a *zemlianka* was built into a hillside, it had a roof of one plane. If it was built in a level area, the roof was built in two planes of rushes (*ocheret*), straw (*soloma*), earth, etc. The roofs of the *zemlianky* reached down to the ground. Such *zemlianky* had no ceiling. The floor - earthen. A clay oven (*pich*) was placed to the right or to the left, near the entrance. They often used a metal heating plate (*plyta*) or a small oven (*chavunna pichka*) instead of a *pich*. These served both for heating the *zemlianka* and for food preparation.
>
> Instead of benches (*lavy*), earthen platforms were often left intact along the walls. These were reinforced with wooden slabs. Until the 1880s, there were very few beds (*lizhka*) in the proletarian settlements.
>
> The miners called their *zemlianka* a "*kaiuta*." A "*shyia*" or "*prykaiutnyk*" shielded the entrance to the *kaiuta*. This entranceway rose above the surface of the earth.
>
> Immediately beyond the upper entrance doors, earthen stairs descended to the interior door at the bottom. A sleeping area was often arranged on the bare earth at the side of the entranceway in summer. This area was otherwise used for storage. The *zemlianky* barely rose above the earth, and only their entranceways extended higher, as if leading from a grave. These entrances were built either into a facade or into a gable wall. The interior door led directly into the dwelling, which was long and narrow, or nearly square in shape. It was always dark and damp inside the *zemlianky*. The workers bitterly joked that "The rain is still beyond the hill, but in our [*zemlianka*] it is already dropping." Families or groups of workers (*artylii*) lived in these *zemlianky*, which they each constructed themselves.
>
> Most *Zemlianky* had only one room. Others, however, had two interior areas. In these cases, the first served as a kitchen (*kukhnia*) where the plate or little oven was located, and the second room served as the sleeping area (*chysta hornystia*) which was relatively free from smoke.[43]

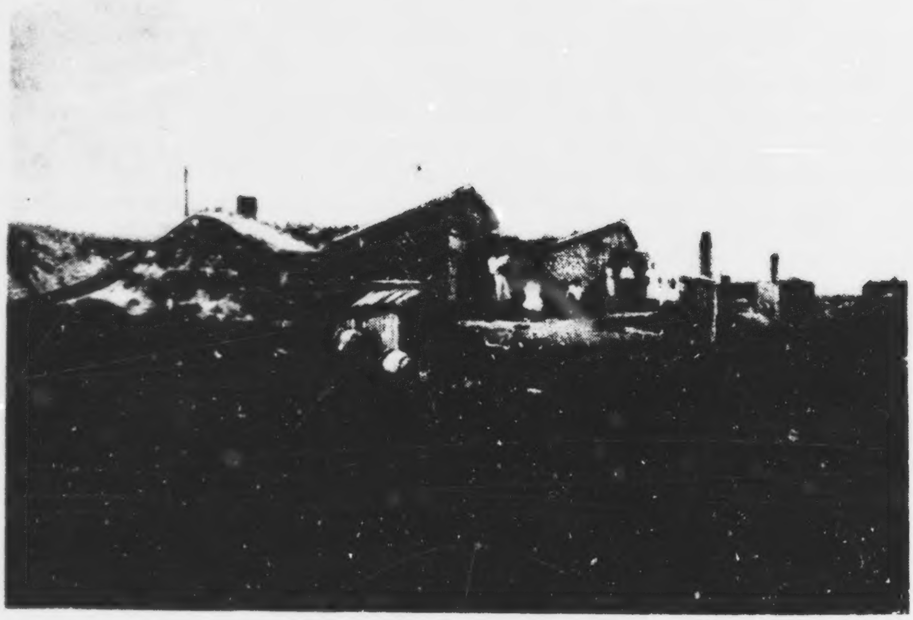


Figure 15: Mine workers of the late nineteenth century stand by their zemlianky. (Figure 1 in M.P. Prykhodko, "Do pytannia pro rozvytok zhytla robitnykiv Donbasu," Narodna Tvorchist ta etnohrafiia, no. 2, 1957, p. 52.)

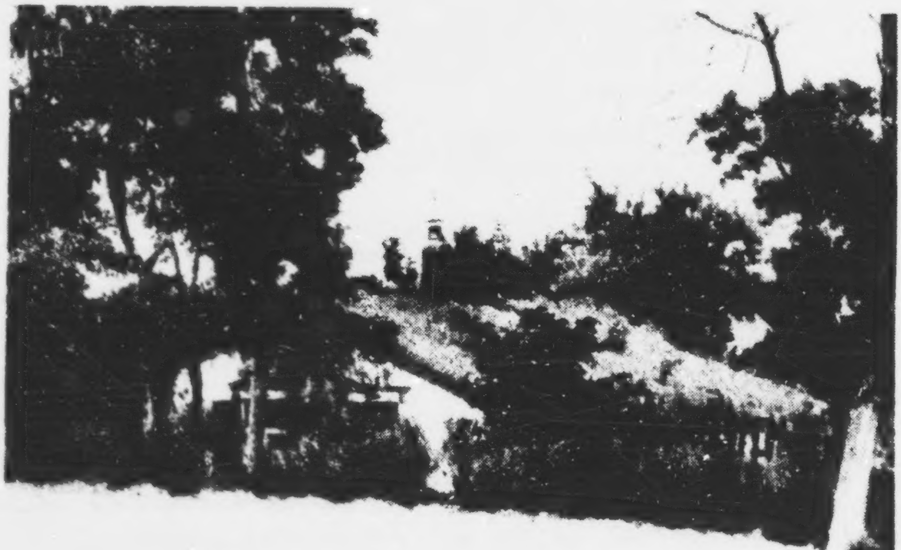


Figure 16: A mine worker's napivzemlianka built in the 1890s. (In Prykhodko, "Do pytannia," p. 53.)

Prykhodko also describes the structure of a *napivzemlianka* in his article:

> A second form of dwelling was the *napivzemlianka*, which differed from the first only that its walls rose from the earth to a greater degree--one to two meters (Figure 16). The general method of construction of these *napivzemlianky* was very simple. A rectangular hole was excavated to a greater or lesser depth (from 35 cm to one meter). Posts with a fork at the top (*shuly, sokhy*) were affixed in each corner and in the center of each gable wall. Horizontal beams (*balky*) were placed over these posts. The gable posts were slightly taller than the corner posts. The central beam (*svolok*) rested on the taller posts. In this way a slope was created for water runoff. For the walls, rails (*laty*) were fitted into holes in the vertical posts, and ran horizontally around the perimeter of the structure. Wooden slabs were fastened over the rails. Smaller stocks were attached over these to provide for a plaster of clay. The clay surface was whitewashed. Sometimes the walls were lined with unfired bricks (*saman*) of mud, straw or dung, or local sandstone (*kameno-pishchanka*).
>
> To build the roof, wooden slabs (*obapoly*) or boards (*shalivky*) were placed across the angled space between the main beam and the wall beams parallel to it. The boards were overlapped so that each edge of a board was covered by the next. A ten centimeter layer of clay, mixed with dung or straw was spread over the slabs and boards. When this layer dried, a second such layer was applied. The roof was formed in this way. It served simultaneously as a ceiling. A small oven (*pichka*) or simply a metal plate for cooking (*plyta*), was placed into the *napivzemlianka*. The walls and ceiling (*konkova stelia*) were whitewashed. The floor was always earthen. Such *napivzemlianky* were either built with one or two rooms. If there were two, then one served as a kitchen (*kukhnia*) and the other as a living and sleeping area (*kimnata*).
>
> The fifth wall, which divided the structure into two rooms, was either constructed at the same time as the exterior walls or added later. This depended upon the means of the occupants. A porch (*koridorchyk*, *sintsi*) was built into the facade or into the gable end of the structure. The majority of such entranceways were built under a separate roof, though some stood under the main roof. In the later case, the entranceway was generally located at the gable end.

> During rain, the roof materials absorbed water and leaked, the water and mud falling directly into the dwelling. In the winter, walls cracked and frost penetrated the room. Walls were made of wooden slabs and clay and were not more than 9-13 cm thick.[44]

Construction and railway workers, as well as farm migrants of the nineteenth century also used zemlianky for shelter. Construction workers often worked in brick factories, stone quarries and isolated sites located far from town centers. Many of them lived in caves, primitive lean-tos, barren holes, or pits (iamy) covered with feathergrass.[45] Proletarians on the Zamok and Pisok Hills of Lviv fashioned similar dwellings for themselves. By digging a pit out of clay and covering its sides with boards and its roof with flattened tin plates smeared with earth, they housed themselves in a most crude manner. They used rock-filled sacks as doors in winter, and covered window openings with rags. As an oven they used bricks set on three steel legs shoved into the earth. Some Lviv workers lived in pits lined only with lime or bricks.[46]

The first railways of Ukraine, built in the 1870s, were constructed by migrant peasant workers. Hundreds of thousands of these men flocked to construction sites where they worked sixteen hours a day.[47] In summer they camped under the open sky, and in winter lived either in unheated barracks or zemlianky of their own construction.

Some 250,000 migrant farm workers came to the southern provinces of Ukraine around the turn of the century, seeking to supplement their earnings. They would work twelve hours a day for a period of two to three months to one year, before returning home. They typically dwelt in zemlianky.[48] Aside from the type of zemlianka described earlier -- a single or double-slanting roof covered in straw and earth -- these workers lived in much deeper pits known as snake-pits (hadiuchnyky).[49] These hadiuchnyky had walls almost completely submerged in the ground with only 75 - 104 cm protruding above ground. In summer these pit houses were exceptionally humid, stuffy and damp, leaking water from above and below ground.[50]

Soldiers in East European armies in the nineteenth century were familiar with the construction of the *zemlianky*. These were constructed during extended stay-overs in the field and during a prolonged siege or defense of a fortress. Three types of *zemlianky* are described in the *Entsiklopedicheskii slovar*, vol. 23, published in St. Petersburg in 1894.[51]

In this description, a *zemlianka* with a two-planed roof was built by digging a rectangular hole slightly less than a meter deep. The length and width of the excavation depended upon the intended number of occupants. (An area of 9 feet by 2.5 feet (2 sq m) was normally calculated for each man). Long poles were leaned from opposite ends of the hole onto posts, planted vertically near the central axis of the structure. In this manner, a saw-horse type roof was constructed. Once the planes of the roof were covered with wattle, a thirty centimeter layer of earth or sod was piled onto them. Earthen stairs led down to the door, and windows were placed at the top of the gable walls. According to the encyclopedia, ten men could erect a *zemlianka* of this type suitable for sixteen occupants in nine hours.

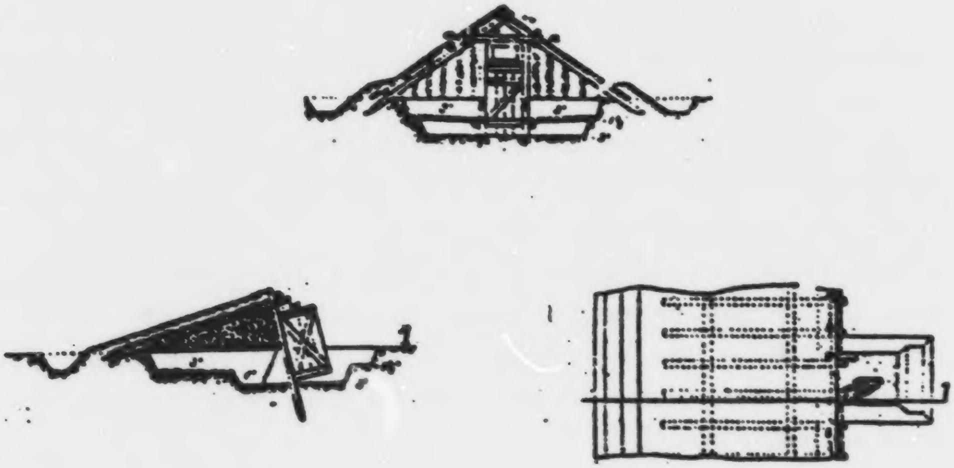


Figure 17: Concept drawings and cross section of *zemlianky* used by Russian soldiers in the nineteenth century. (Figures 1 and 2 in *Entsiklopedicheskii slovar*, 1894 ed., s.v. "Zemlianka.")

A simpler structure was built with a roof of one plane. A similar hole was excavated, although the sleeping areas were all aligned in one row. Vertical posts were dug into the ground along the length of one wall. Longer poles were fastened to the top of these posts for the roof. The areas of the walls were filled with wattle and sod, or with boards. The drier the earth and the colder the season, the deeper the structure was sunk into the ground.

A third type of zemlianka, round in shape, was the easiest to construct. A round hole was excavated slightly less than one meter in depth. An earthen wall of similar height was mounded along its perimeter. Poles were fastened above the pit in a conical shape. These were covered with straw, brushwood and earth. The occupants slept along radii of the circle, with their feet towards the center. A fire could be kindled in the middle of the zemlianka if an opening was left uncovered in the roof.

Any type of zemlianka could be heated by means of an oven made of mud. Walls would be doubled in thickness to increase insulation. It was important to provide sufficient drainage around the zemlianka and to ensure the strength of the roof. A roof collapsing under the weight of the earth or snow could cause a serious accident "as [had] been demonstrated on numerous occasions in the war of 1877-1878."[52]

A similar practice in Ukraine continued into the twentieth century. One Canadian immigrant who had grown up near Bila Tserkva in central Ukraine recalled building kureni in his youth.[53] The term kurin, as has been mentioned, was used in the sixteenth century by cossacks in reference to their communal dwellings on the Sich. The informant emphasized that similar dug-out structures had been built in his homeland "for a thousand years."[54] The informant's kurin was generally built for a group of six men, though larger ones could be built to house more, depending on the circumstances.

A site was selected where the earth was strong (kripka zemlia) and not sandy (ne pisok). A pit was excavated nearly two meters deep and three meters wide. An average kurin measured approximately four meters long, though it could be extended to six meters or even more. The earthen walls of the pit were shaved flat and left unsupported. A roof of two planes was constructed over the excavation in the same manner as the two-planed zemlianka in the encyclopedia article. Poles (driuchky) were placed over the hole at an angle from each of the long walls. They were lined up, side by side, covering the entire length of the structure. The poles from either side met at the peak of the roof, where they were fastened together.

A second type of roof structure eliminated the need for building a careful and strong joint at the peak of the structure. In this variant, a long horizontal beam (svolok) was suspended over the excavation along the major axis of the structure. It was rested on the earth beyond the excavation on both sides. The roof poles were laid from the edge of the hole onto the beam. The pitch of this roof was quite shallow.

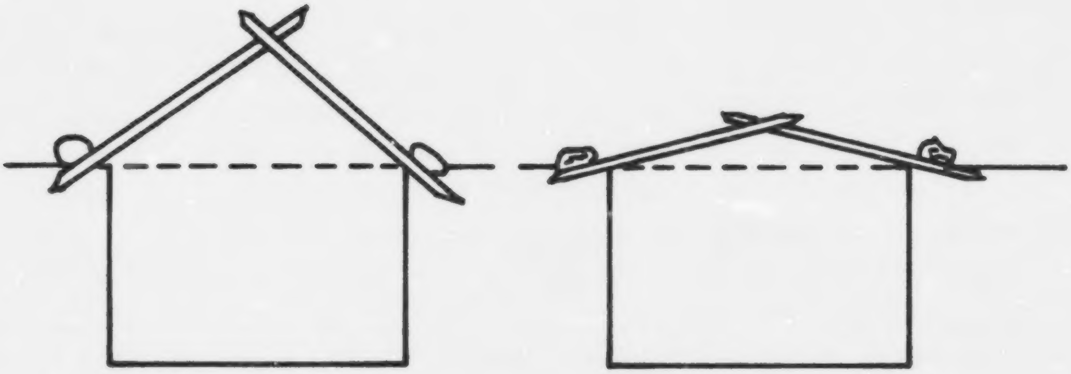


Figure 18: Concept drawing of two variants of frames for the kurin. (As described in a Personal Interview with an anonymous man from Bila Tserkva, Smoky Lake Foundation Bar-V-nok Senior Citizens Home, Andriy Nahachewsky, June 16, 1983.)

The lower end of each angled pole may have been supported and secured by a rock. The poles were covered with hay (sino) which helped repel water and also supported a thick covering of dirt. If the structure was to be used for an extended period, it could be further improved by covering it again with clay (hlyna), and then, if desired, with a final layer of gravel (grab).

A doorway was built into this type of structure wherever it was convenient, often in the center of a long wall. The door was rarely built into a west wall because of westerly winds. Most frequently, it was built into the east or south wall. The door was made of boards, and always opened to the inside. It was usually only a meter tall and the occupants had to stoop down when entering. A set of stairs was cut into the earth on the outside of the *kurin*, descending to the base of the door. The floor of the interior was situated one more step below the threshold. The stairs were made entirely of earth if the *kurin* was to be used temporarily, but may have been reinforced with flat stones for extended stays or in rainy weather.

The entire structure was built without a nail. Wooden pegs (*tibli*) were used to secure the wooden components. The door was equipped with a wooden bolt (*zasuv*) and leather hinges (*zavisy*).

The interior floor plan of the *kurin* was flexible and arranged so as to be most convenient, depending upon the number of occupants, storage requirements, etc. A metal stove (*baishtok*), which burned coal, was placed in one corner of the room, located so that it would not interfere with the door and so that drafts from the door would not blow directly onto it. A metal chimney extended from the *baishtok* through the roof. If metal pipe was unavailable, then a square chimney was often made of bricks (*tsehly*). Beds (*polyky*) were constructed of wide boards placed

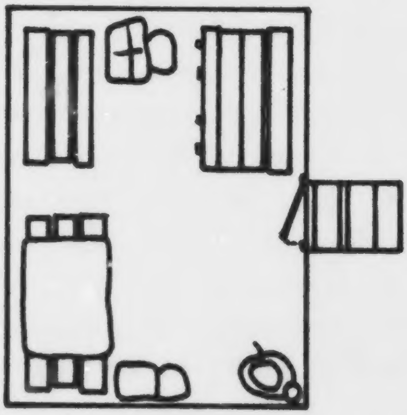


Figure 19: Concept drawing of a typical interior plan of a *kurin*. (As described in a Personal Interview with an anonymous man form Bila Tserkva, Smoky Lake Foundation Bar-V-nok, Andriy Nahachewsky, June 16, 1983.)

upon two saw-horse frames (kozlyky). Two or more men slept on each bed.

Soldiers and industrial workers were not the only people living in zemlianky in Ukraine in the nineteenth and early twentieth centuries. These structures were also built and occupied by other segments of the population. The poorer peasantry in southern Ukraine,[55] Podillia,[56] and other regions often constructed zemlianky or napivzemlianky because they required little wood; a scarce and expensive building material in that society. Pit houses were built when a new area was first being settled, as when a village expanded into new territory, or when a group of people migrated to a new location.[57] Hermits, men who wished to live in isolation, sometimes built themselves such a primitive dwelling away from the houses and people of the village.[58]

One specific burdei was identified in the village of Zabrudivka, near Chernivtsi in Bukovyna.[59] It was built in the nineteenth century and occupied until the builder constructed a more permanent house. By the turn of this century, it was being used as a root cellar to store potatoes, cabbage, and other vegetables. The structure was located on the farmyard of the Rusnak family, a short distance from the house.

In building the structure, an excavation was made into hard clay soil in a level area. The hole was approximately four meters long, two and a half meters wide, and slightly less than two meters deep. The major axis of the structure ran from east to west.

Vertical poles (slupy) were placed inside the hole to brace the walls. The slupy were spaced at approximately 60 centimeter intervals. A beam (balok) was laid over the tops of the slupy on each of the two long walls. Each balok lay horizontally at ground level along the edge of the pit. Each slup came into contact with a balok and helped bear its weight. A series of rafters krokvy were made of long narrow poles. The krokvy were driven into the ground on one side of the pit, and bent in an arch over to the other side. When they were all in place, they formed a convex roof, as in Figure 21. The frame was then covered with sod (maskeg). The sod was layered as thickly as necessary to keep the rain from leaking into the structure. The curvature of the roof helped the water to run off. When possible, it was beneficial to further pack the roof with a layer of clay, then with moss (mokh). These latter materials increased the water repellancy of the structure as well as its insulation.

A series of stairs were excavated at the exterior of the structure, descending into the short east wall of the excavation. A door was attached to the entranceway at the bottom of the stairs. At the time the informant saw the structure, the door contained a small window which was shaded by a curtain (firanka) to help keep the cellar cool and dark.

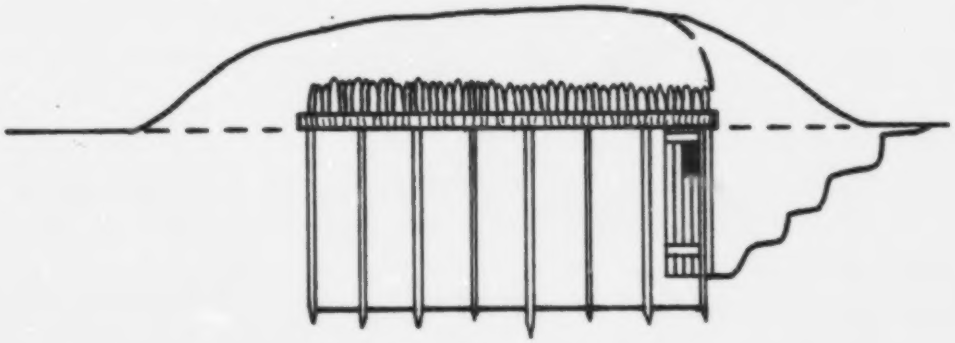


Figure 20: Reconstruction of the Rusnak burdei in Bukovyna. Profile. (As described in a Personal Interview with Mr. Mike Rusnak, Andriy Nahachewsky, June 16, 1983.)

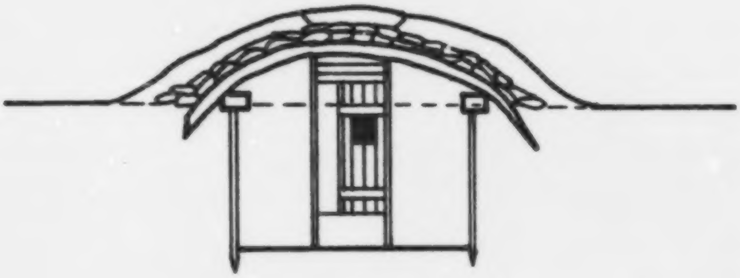


Figure 21: Reconstruction of the Rusnak burdei in Bukovyna. Frontal view. (As described in a Personal Interview with Mr. Mike Rusnak, Andriy Nahachewsky, June 16, 1983.)

A structure such as this took one or two weeks to construct, depending upon the conditions and the skill of the builder. This design required a relatively small supply of wood. Although this was the only *burdei* in this particular village, the informant stated that any one of the villagers would have known how to build one.

A second type of *burdei* was built into the side of a hill (*horbok*).[60] To build such a structure, the earth was removed from a hillside to create vertical walls and a level floor area. Such an excavation may have been as large as six meters by four meters. The back wall and parts of the side walls were insulated by the earth of the hill. These *burdei* often had log walls. Their roof usually consisted of one plane, slanted towards the hill. Grass eventually grew on the earth which was mounded onto the roof. One such *burdei* was built by a group of people who came to live in a place for only one or two years.[61]

Zemlianky of sod or clay were also used as temporary shelters. These were sturdier in construction. A pit would be cleared down to a layer of clay. The clay was then mixed with water and chopped straw or grain chaff from which long, cylindrical sections were molded and used to erect short walls about the pit. A flat or canopy-shaped roof would cover the structure.[62]

Lumberjacks and raftsmen in the mountainous areas built a pit structure known as *kolyba*. The *kolyba* resembled the North American Indian wigwam and consisted of four posts planted firmly in the earth, tied together at the top and supporting cross beams. Poles were leaned against the cross beams on three sides of the structure at cross angles to one another. In this manner, a hole was left at the top of the structure for ventilation. Turf was packed onto the sides of the house which stood above a fairly deep hole. The pit walls were reinforced in their corners by brushwood. Benches were carved out of the earth along the long walls for sitting and sleeping. A fire pit was located inside and the only furnishings consisted of a small table made from twigs and branches.[63]

Fishermen,[64] shepherds,[65] and workers in other such occupations often worked in isolated areas and used some form of temporary shelter as dictated by the climate. The use of *zemlianky* in these contexts continued into the twentieth century.

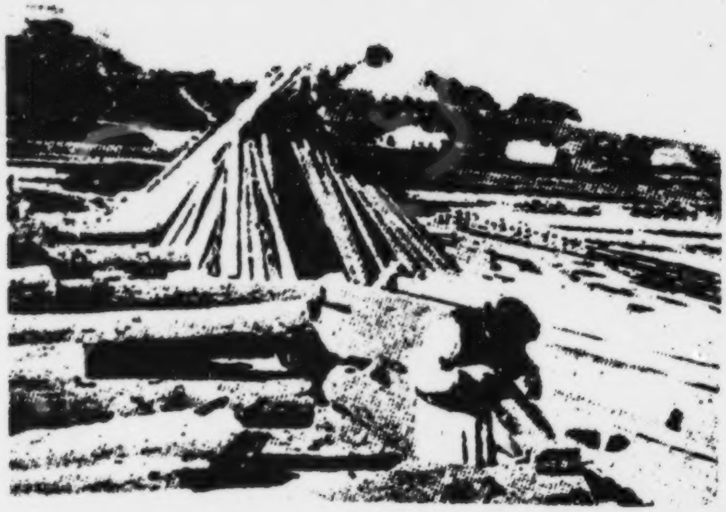


Figure 22: Temporary fisherman's dwelling, made of boards. (Plate 6-f in Khvedir Vovk, Studii z ukrainskoi etnohrafii ta antropolohii, Prague: Ukrainskyi Hromadianskyi Vydavnychyi Fond, [1927].

Figure 23: Temporary dwelling of boards. (Plate 7-g in Vovk, Studii.)

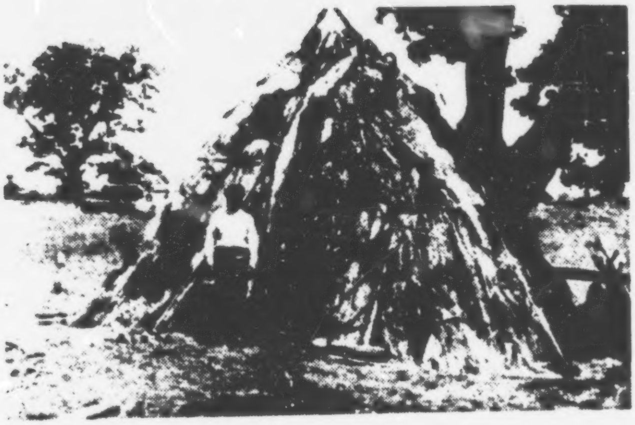


Figure 24: Temporary fisherman's dwelling made of straw. (In Entsyklopediia Ukrainoznavstva 1970 ed., s.v. "Polissia," by O. Shtul.)

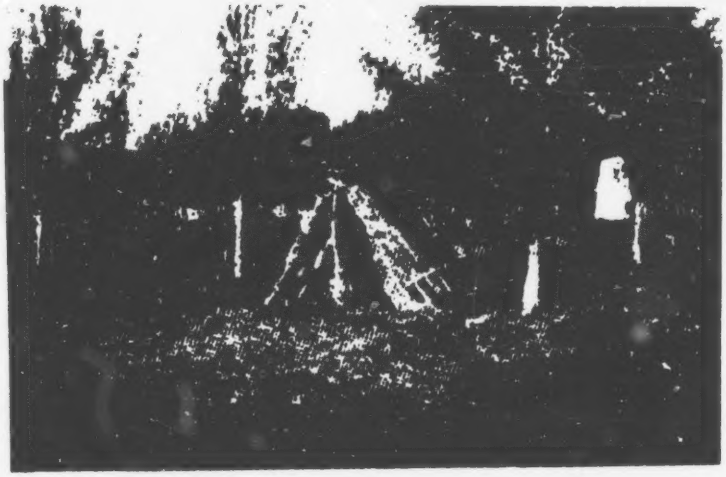


Figure 25: A temporary dwelling made of poles resembling the North American Indian wigwam. (Plate 6-h in Vovk, Studii.)

Destitute families in the Hutsul region of the Carpathian mountains lived in shanties which they called burdei. These two-room dwellings were covered with flat roofs overlaid with pebbles and stones. An even poorer one-room shack of this kind was known as bukhnia. Sheep often shared such quarters with the family in the winter, helping to keep the room warm.[66]

Semi-subterranean dwellings remained a productive genre of architecture well into the twentieth century. Underground structures (iamy) were built by the surviving civilians in towns and villages devasted by war. These were used until it was once again safe and building materials could be acquired to rebuild more permanent houses.[67]

In another situation in Galicia, a village community built a school in the mid 1930s. They had enough lumber for the school itself but soon realized that they were short of material to build the night watchman's quarters. The villagers solved this problem by digging a hole in the earth 1.2 meters deep, 2.5 meters wide and 3.5 meters long. Boards and planks were secured over the hole, slanting up to a peak from each of the longer sides. The interior of the structure was tall enough to stand and walk in once the boards were in place. The boards were covered by straw, then the entire structure was piled over with the earth which had been removed earlier from the hole. Stairs and a door were built into a gable wall of the structure and the interior was furnished with a stove and cot. The night watchman lived in this zemlianka for one winter, until the village could acquire more lumber and build him a more permanent residence.[68]

C. Other Dug-Out Structures in Ukrainian Folk Architecture

In addition to the use of dug-out structures as dwelling places, dug-outs were also used in Ukrainian folk architecture as storage places. This practice too had its origins in Neolithic times. In the early Trypilian period pits functioning as outbuildings were used for the storage of grains and other food products. They were located close to

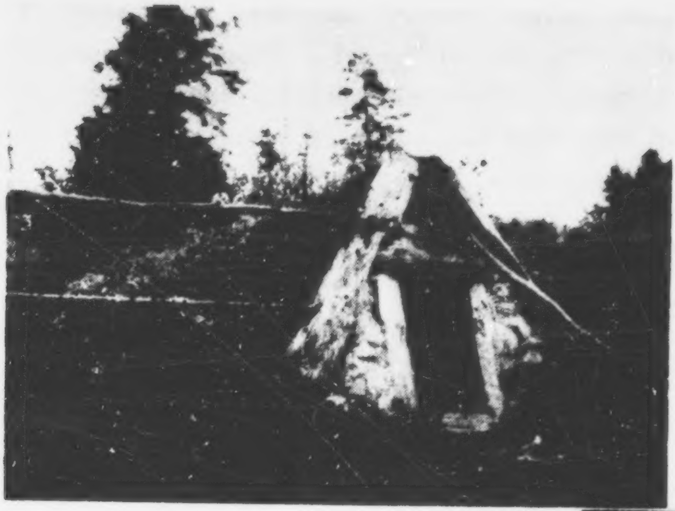


Figure 26: Storage structure (pivnytsia) used for potatos. (Figure 93 in Myroslav Sopolyha, Narodna arkhitektura ukraintsiv skhidnoi slovachchyny (Svydnyk, 1976.)

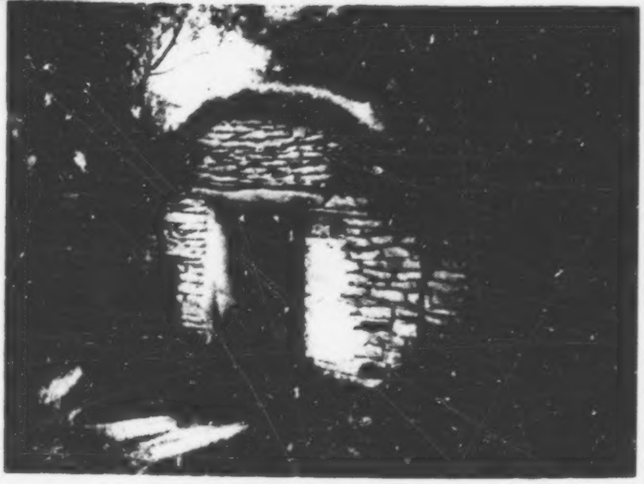


Figure 27: Stone pivnytsia known as dolyka. (Figure 94 in Sopolyha, Narodna.)

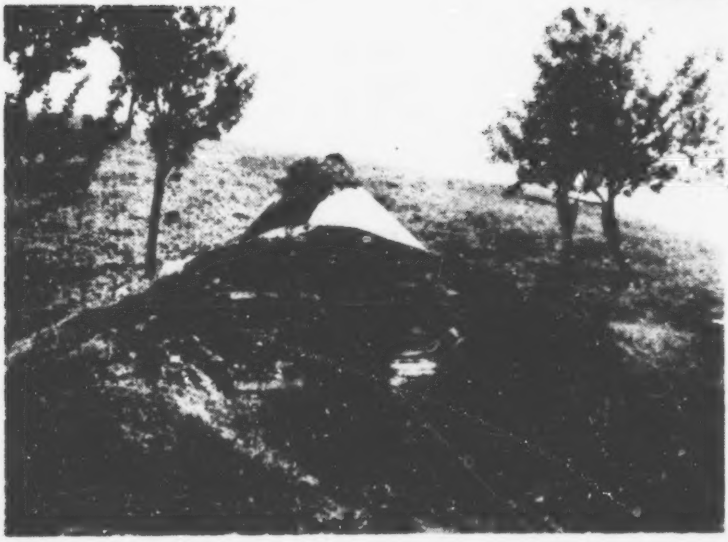


Figure 28: Stone pivnytsia dug out of a hillside. (Figure 95 in Sopolyha, Narodna.)

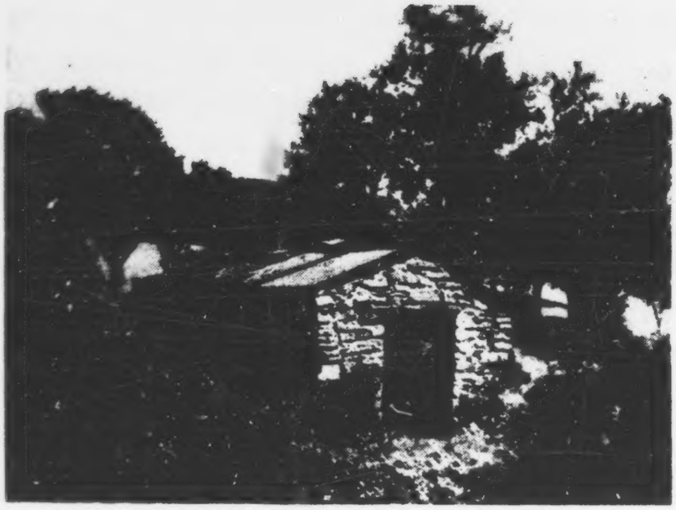


Figure 29: Stone pivnytsia covered with stone slabs. (Figure 96 in Sopolyha, Narodna.)

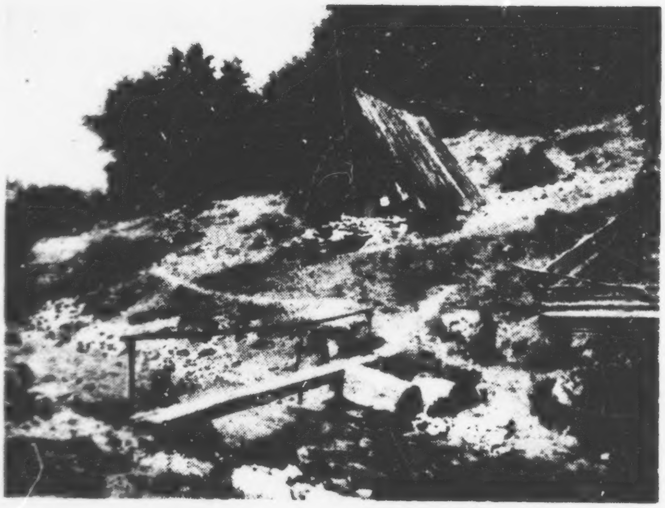


Figure 30: A pivnytsia dug out of a hillside and covered with a tall roof. (Figure 97 in Sopolyha, Narodna.)

the napivzemlianky themselves and formed part of an integral community settlement.[69]

Greek colonists of the Berezan Island also stored their grains in pits located outside of their dwellings.[70] First century Slavs, however, differed by arranging their storage pits within their zemlianky. These were usually located in a corner of the dwelling and sometimes between two parallel wall partitions made of stones.[71]

The Priashiv homes of the ninth century were often built with more than one room, an additional room holding storage pits called dolyky or rupy. They were used to store potatoes and feed for cattle. These storage pits were also found adjacent to the dwelling place. Storehouses (komory) became common in the eighteenth and nineteenth centuries. They were located behind the siny of a home, and were built as dark, narrow, low-ceiling rooms containing a dug-out section for potato storage.[72]

In parts of Western Ukraine, a type of storage pit called the lokh or pohrib evolved. These pits were located either under the komora or simply out in the yard. In the latter case, they were often covered by a double-sided slanting roof, covered with straw. Their appearance resembled that of the zemlianka or burdei.[73]

A simple variant of a storage pit was identified in Galicia in the fourth decade of this century. In the fall, after harvesting the vegetables from the garden, a deep hole 60 cm was dug into an area of the garden itself. The collected potatoes or beets were mounded into this hole, then covered with straw. The straw insulated the potatoes, keeping them from freezing over the winter.

A small hole was made into the side of the mound whenever potatoes or beets were needed. The person simply inserted his hand into the pile, retrieved a one or two week supply of the vegetable, and packed the hole with straw again to keep out the frost. The mound itself decreased in size as its contents were removed. In the spring, the remainder of the vegetables were taken into the barn (stodola) for storage as they would have germinated or spoiled in the soil during warm weather. The pit was simply filled in and the garden was replanted over the area.[74]

Wealthy farmers and members of the Polish nobility in the nineteenth century built large *lokhy* mortared from brick or stone. These structures had a vaulted roof, and a stone or brick entranceway "neck" (*shyia*), which ascended from the structure's floor to ground level.[75]

In some areas of Ukraine, pigpens (*sazh*, *karnyk*, or sometimes *burdei*) were occasionally built into the earth, their construction analogous to a *zemlianka*.[76]

The building of additional outbuildings in Ukraine was limited by economic and social conditions.[77] The size of the garden and yard of many peasants negated the possibility of a separate structure for storing vegetables. In Alberta, however, farming expanded to a larger scale and practically every farmer owned 160 acres of his own land. As long as they had the manpower, an Alberta family's garden was generally large, and a great deal of space remained in the farmyard for as many extra structures as desired. Material prosperity and climate also proved conducive to the construction of root cellars in Alberta.

Root cellars were most likely used by Ukrainians in Alberta as soon as their first gardens were harvested. The vacated *burdei*, used as a dwelling place a few months earlier, may well have housed vegetables over the winter. If the immigrant had by-passed the dug-out shelter stage, building a more permanent house from the outset, he may have excavated a root cellar somewhat later. Such structures were used and continued to be built well into the 1960s.[78]

In winter, most root cellars were used to store potatoes and other vegetables which could be kept for extended periods. Before winter was over, large blocks of ice were cut and hauled into the cellars. The ice blocks were sometimes insulated with sawdust.[79] If the structure was kept intact, the blocks of ice sometimes lasted throughout the summer, cooling the produce within. Though vegetables were the most common produce stored in root cellars, many other commodities, edible and non-edible, were also stored here on occasion.[80]

At least one dug-out structure is reported to have been built to house livestock,[81] illustrating a continuation of this practice from Western Ukraine as described above. The builders of the structure called it a burdei.

Dug-out structures called burdei were also built for the purpose of distilling alcohol. At least three such structures were reported in the process of field work.[82] These structures were reportedly built in the same manner as the earlier dwellings. At least one was built around 1920, after the immigrants had established themselves on their land and could pursue such activities. Since moonshining was illegal, these burdei were built in a forested area, away from the farmstead. Dug-out structures were well suited to this purpose because of their good insulation.

Structurally, Alberta root cellars varied greatly. The technique of simply covering a mound of vegetables as described above may have been continued in Alberta, though it did not suffice in the more severe Alberta winters. At the other extreme, at least one root cellar in east-central Alberta was monumental in size and structure. The Hoculak root cellar was built of field stone and concrete, with an arched stone entranceway descending into the main vault. The interior of the structure was approximately three meters deep and measured nearly four meters square. This massive structure required little or no maintenance and was permanent. It was identical with the descriptions of the lokhy of the nobility in Western Ukraine at the turn of the century as described above. The vast majority of root cellars fell between the extremes and were intermediate in size and permanence. Three such Alberta root cellars, in various conditions of repair, are illustrated in Figures 31, 32, 33 and 34.

In the process of field work, many informants did not generally differentiate those burdei built as dwellings from those built specifically for storage. The specific terms for each type of structure were sometimes extended in meaning to include both types. Certainly, in some cases, the same structure had actually been used first as a dwelling and later as a cellar.[83]

In many instances, the structure of a root cellar was similar or even identical with that of a temporary dwelling. In general, however,

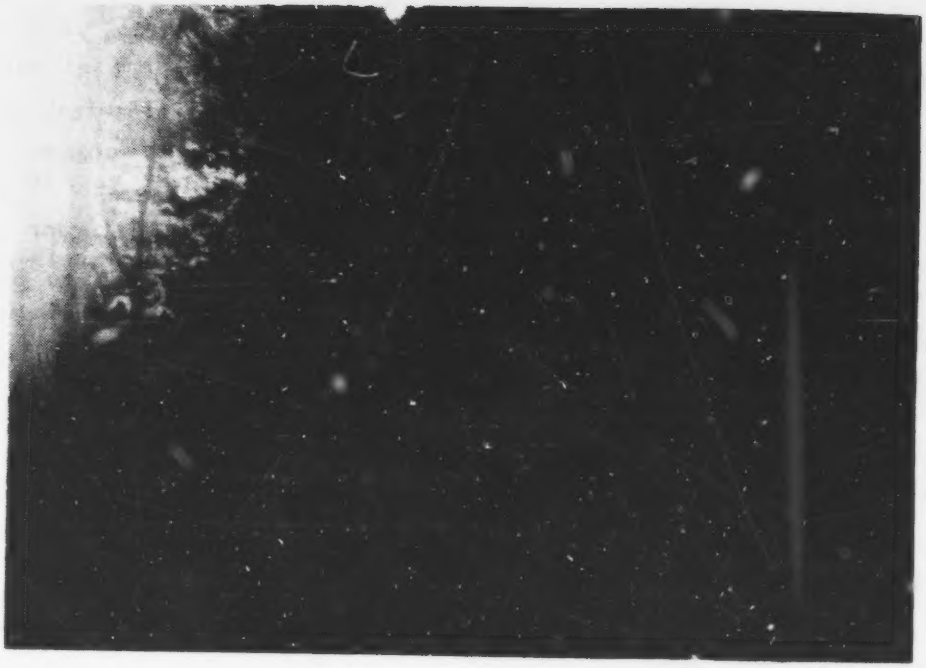


Figure 31: Nedoshytko ice-house near Bruderheim. Built in the 1920s. (Photograph taken in 1983 by Andriy Nahachewsky.)

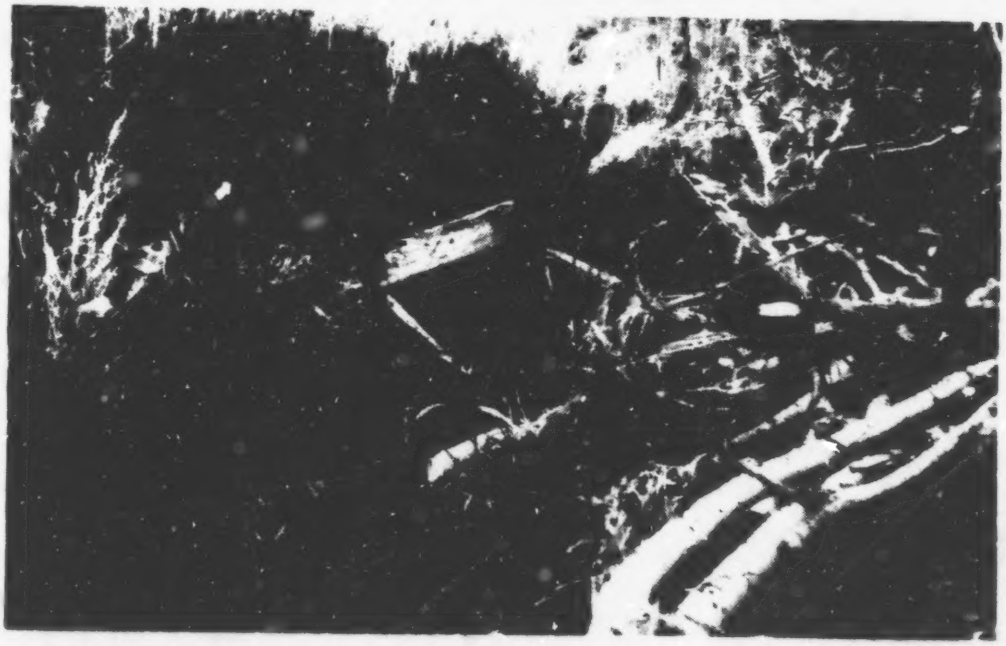
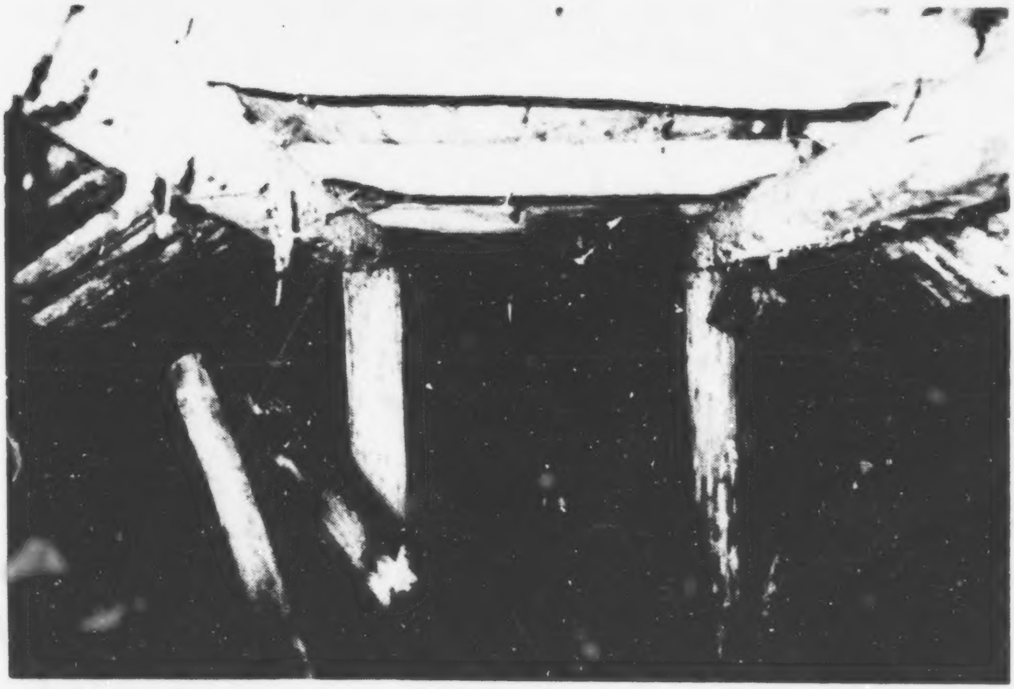


Figure 32: Yankowsky ice-house, near Skaro, Alberta. Built in the 1960s. (Photograph taken in 1983 by Demjan Hohol.)

Figure 33: Interior of Kitz ice-house, south-east corner. Near New Kiev, Alberta, built in 1942. (Photograph taken in 1983 by Andriy Nahachewsky.)

Figure 34: Interior of Yankowsky ice-house. Note the "four-post" construction with additional interior posts for support. The roof is composed of three planes of rails. (Photograph taken in 1983 by Demjan Hohol.)



storage structures tended to display certain unique features. One prime concern in the construction of the root cellar was maximum insulation. It was desirable to store produce at a constant and low temperature. For this reason, the structures were generally built deep into the earth.[84] Entrances tended to face west or north, avoiding the sun's rays. These structures rarely had windows, but if they did they were shaded or curtained to help keep the interior dark and cool.[85] Since they were not intended as high traffic areas, internal posts and supports could be placed at frequent intervals to support the roof, without seriously inhibiting the use of interior space.[86] Structures built more recently were more likely to include nails and sawn boards in their construction.

D. Early Rural Architecture in Alberta

Various people had settled and begun farming in east-central Alberta prior to and during the period of mass Ukrainian immigration. All pioneers who settled on the land of the northwest had to deal with the fundamental problem of shelter. No major study of the dwellings of these early pioneers in east-central Alberta has been found, though other areas of the northern American plains have received some attention.[87] Scholarly works and popular histories both make extensive use of early photographs for their discussions of pioneer shelters.

Prior to the general availability and affordability of sawn lumber, dwellings were made of logs, sod and/or rocks[88] (see Figures 35, 36 and 37). Each building material was used depending on its availability. Rocks and especially sod were used in the treeless plains. Logs were used where wood was more readily available, as was the case in most of east-central Alberta.

> At Lawrence, Kansas, many old structures were to be seen. There were dugouts, sod houses, log cabins, shake structures, and other odd dwelling places. In the summer of 1854 it was a village of tents, but by the following year most of the houses were made of sod. The

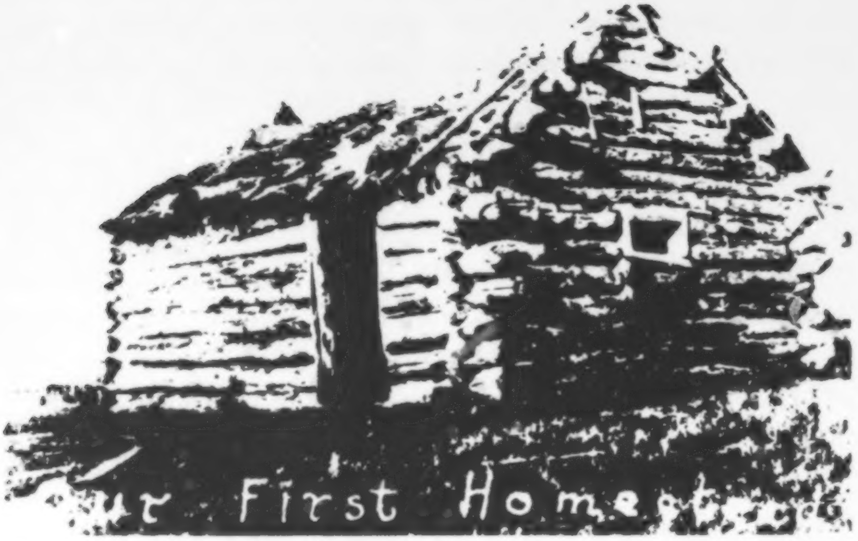


Figure 35: "Our First Homestead." the home of the Summers family (1902-1905) who immigrated to Alberta from Nebraska. Note the unshaven logs and sod roof. (Printed in Tony Cashman, A Picture History of Alberta. Edmonton: Hurtig Publishers, 1979, p. 57.)

Figure 36: "Sod House: The Beginning of Better Things. Buffalo bones in the Foreground." The house is made entirely of sod strips supported by poles. (Ernest Brown Collection no. 254. Printed in Heather Robertson. Salt of the Earth, Toronto: James Lorimer and Company, 1974, p. 33.)

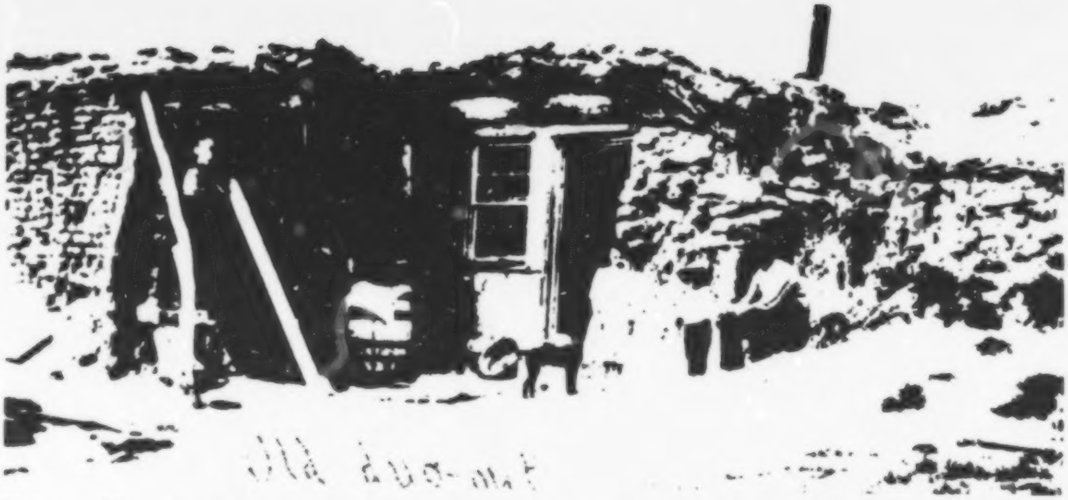


Figure 37: A dug-out in Kansas. This structure illustrates the use of rocks, boards and blocks to form the front of the structure. Lumber is used in the door and windows but apparently not in the roof. (Printed in Barbara Oringderff, True Sod, North Newton, Kansas: Mennonite Press, 1976, p. 24.)

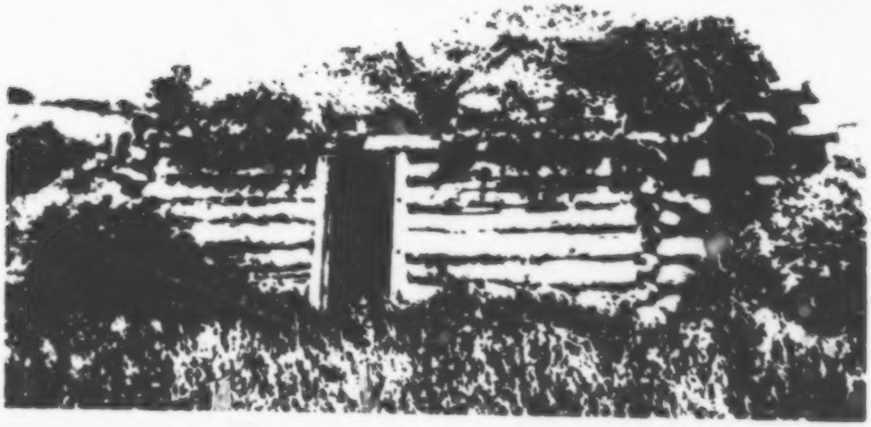


Figure 38: The home of Rufus Belt in the Stettler district, pre-1904. The structure is dug-out, sunk two steps into the earth, "to give the elements less to batter." (Printed in Cashman, A Picture History, p. 59.)

> sod house built at this time had not developed into the standard type which came into being on the plains in the next pioneer generation. Sod was used for the walls but not for the entire house as was done on the true sod-house frontier. A style which became fairly common and which was almost peculiar to Lawrence at this time was called "the hay tent." It was built by setting up two rows of poles and then bringing them together at the top and thatching the sides with prairie hay. The house was all roof and gable; the windows and doors were in the end. The gables were built with sod walls.[89]

The hay tent, called a "grotesque attempt" by Welsch, was not peculiar to Kansas, as shall be illustrated below. This description strongly suggests certain temporary structures built by Ukrainians in Alberta a half century later.

In Alberta, sod houses and log cabins were the predominant forms of dwellings, aside from the portable roofs of tents and wagons. The majority of these structures were built above ground (Figure 35) though examples of each are identified as dug-outs, often built into the sides of hills (Figures 37, 38).

A dug-out construction offered the advantages of greater insulation, "to give the elements less to batter."[90] Shorter walls were more solid. (Tall walls of sod could eventually collapse, especially if poorly built). Shorter walls also significantly reduced the labour of preparing logs or cutting sod. In spite of these limited advantages however, a dug-out was considered a more primitive structure.[91] The disadvantages of dug-outs, as perceived by these pioneers, included the additional dampness from ground seepage, the dirtiness, and the danger of an animal collapsing the roof.[92] It appears that few pioneers were content with the dug-out shelters and most built a new sod or a frame house as soon as possible.[93] "It was quite common . . . for a family to first build a dug-out or half-sod dwelling and then, very close to it, construct their free-standing sod house entirely above the ground."[94] Once this was done, the earlier structures were used as storage cellars or animal shelters.[95]

Log and sod houses were eventually replaced by framed houses of lumber. Before that time, however, sod houses in the prairies had

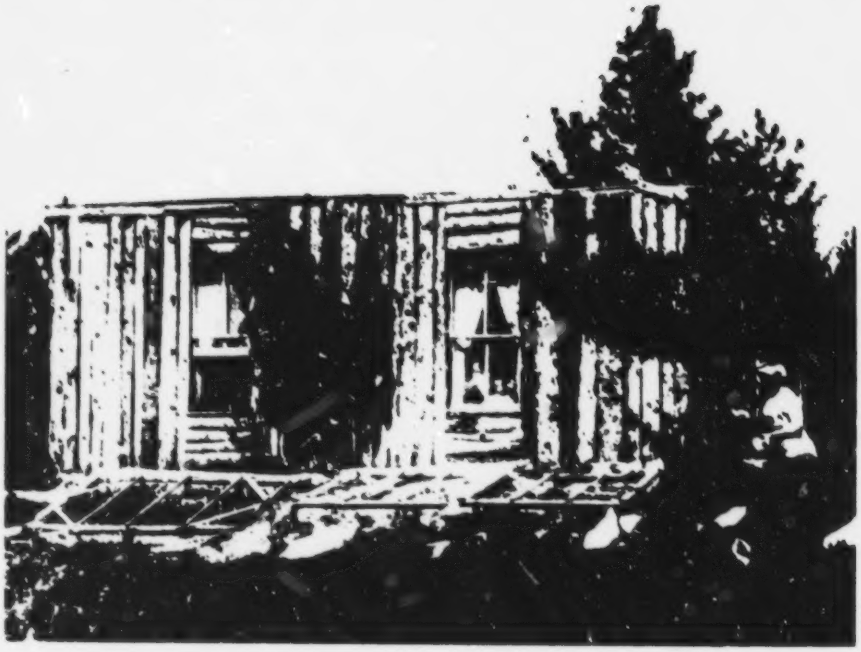


Figure 39: The log home of Mr. and Mrs. Tom Ogden of Bingley. The construction features both vertical and horizontal logs. (Printed in Cashman, A Picture History, p. 57.)

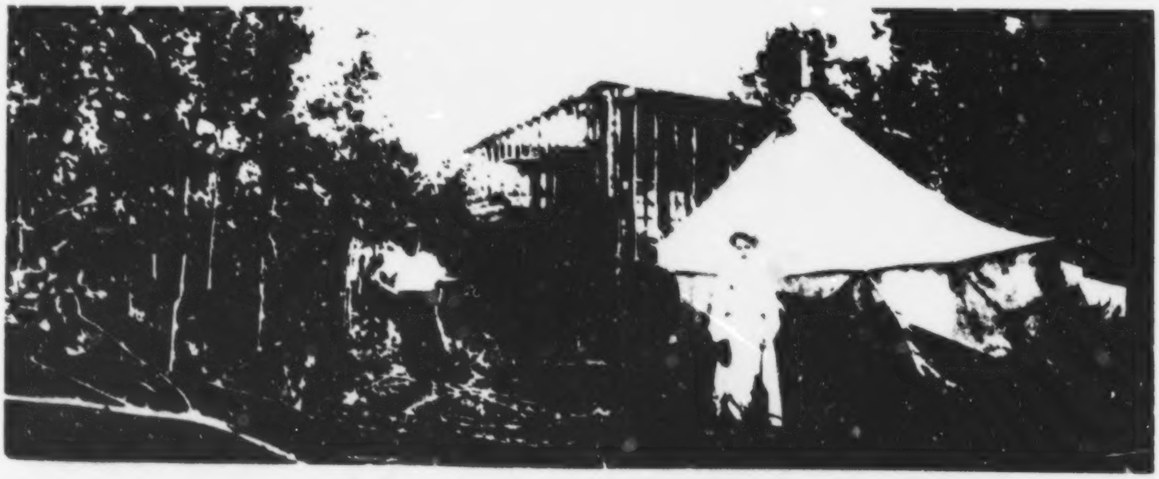


Figure 40: The Ernest Brown house near Edmonton in 1906. As the construction of the house progressed, the family camped on the site in a tent. (Printed in The Pioneers: The Picture Story of Canadian Settlement, Toronto: McClelland and Stewart Ltd., 1968, p. 95.)

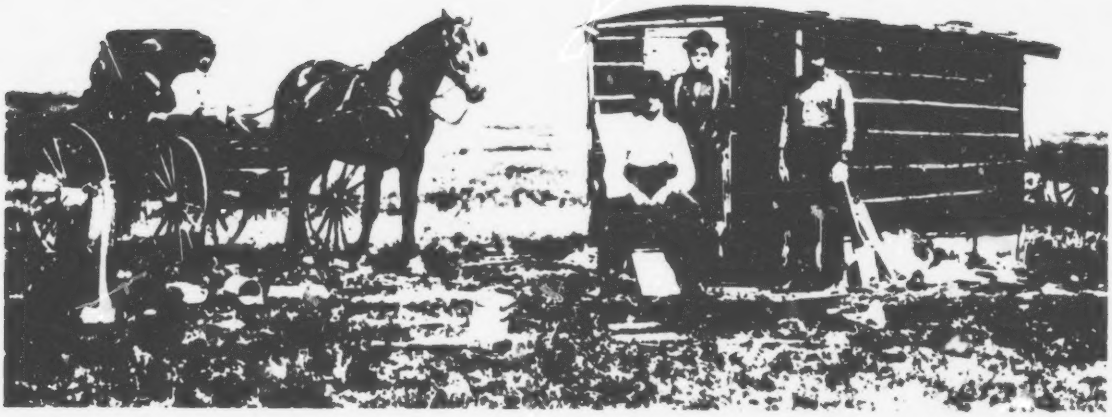


Figure 41: The tar paper shack of Homer Houghton in Claresholm. (Printed in Cashman, A Picture History, p. 59.)

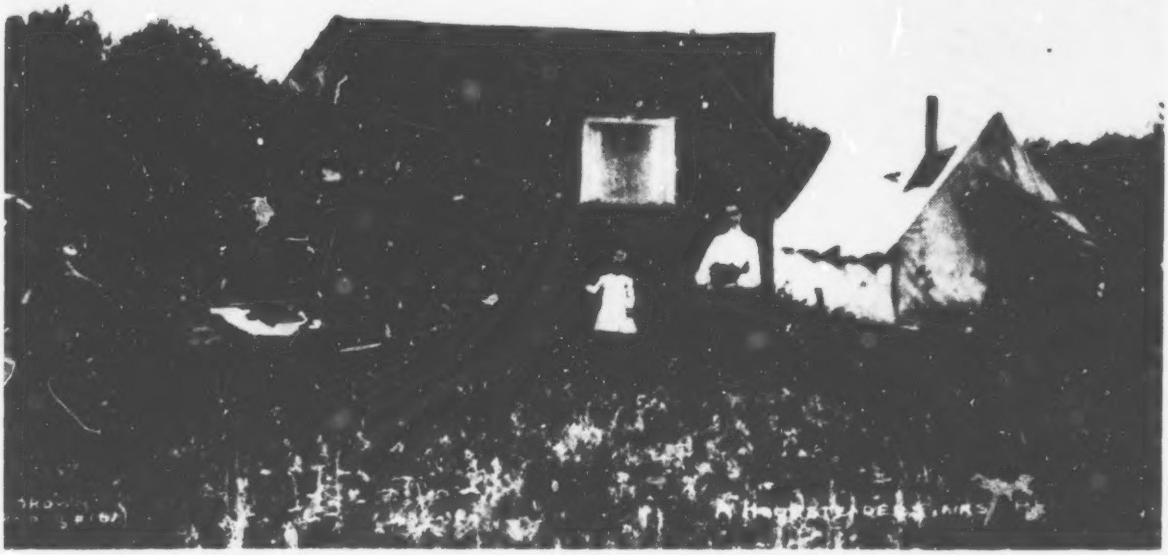


Figure 42: Shack of lumber and tar paper. Note adjacent tent and chimney. (Ernest Brown photograph no. 161. Printed in Robertson, Salt of the Earth, p. 31.)

evolved into a unique type of architecture "a range of types rather than one single form, with adaptations developed for variants of geography, climate, resources, and the skills of the builder."[96] The same can certainly be said of the log cabin.

ENDNOTES

Chapter I: Architectural Context

A. Pit Houses in Archaeology

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4. Hoebel, Anthropology, p. 256.

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18. Shoukoplias, *Arkheolohii*, p. 151.

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22. Khvedir Vovk, *Studii z ukrainskoi etnohrafii ta antropolohii* (Prague: *Ukrainskyi Hromadskyi Vydavnychyi Fond, [1927]), p. 83.*

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24. Ibid., p. 39.

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B. Dug-Out Dwellings in Ukrainian Folk Architecture

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55. M.L. Strunka, "Ukrainske narodne zhytlo mykolaivshchyny (kinets 19 - 20 st.)," NTE no. 2 (1983), p. 64.

56. T.V. Kosmina, Silske zhytlo Podillia (Kiev: Naukova Dumka, 1980), p. 49.

57. Group discussion in Smoky Lake Foundation Bar-V-nok Senior Citizens Home, Andriy Nahachewsky, June 16, 1983.

58. Personal Interview with Mr. Metro Romanchuk, Andriy Nahachewsky, June 16, 1983.

59. Personal Interview with Mr. Mike Rusnak, Andriy Nahachewsky, June 16, 1983.

60. Personal Interview with Mr. Metro Romanchuk, Andriy Nahachewsky, June 16, 1983.

61. Ibid.

62. Vovk, Studii, p. 84.

63. Ibid., p. 85.

64. Ibid.

65. Panas Myrnyi, Vybrani tvory: Khiba revut voly iak iasla povni? (Kiev: Dnipro, 1974), p. 33.
Also in a Personal Interview with Mr. Metro Romanchuk, Andriy Nahachewsky, June 16, 1983.

66. Volodymyr Shukhevych, "Hutsulshchyna," Materiialy do ukrainsko-ruskoi etnolohii, vol. 2 (Lviv: Naukove Tovarystvo im. Shevchenka, 1899), p. 112.

67. Group discussion, Smoky Lake Foundation, Bar-V-nok, Andriy Nahachewsky, June 16, 1983.

68. Personal Interview with Mr. Peter Prokopiw, Andriy Nahachewsky, July 11, 1983.

C. Other Dug-Out Structures in Ukrainian Folk Architecture

69. Pasternak, Arkheolohiia, p. 125; and Bibikov, Narysy, p. 55.

70. Bibikov, Narysy, p. 246.

71. Bidzilia, Sloviano, p. 39.

72. Rusynko, Naukovyi zbirnyk, pp. 133-134 and 145-146.

73. Kosmina, Silske, p. 102.

74. Personal Interview with Mr. Peter Prokopiw, Andriy Nahachewsky, July 11, 1983.

75. Kosmina, Silske, p. 102.

76. Ibid., p. 86 and 102.

77. Ibid., p. 86.

78. Personal Interview with Mr. Lloyd Yankowsky, Demjan Hohol, July 5, 1983.

79. Personal Interview with Peter and Elsie Rybak, discussing the Serna dug-out, Demjan Hohol, June 8, 1983.

80. Telephone Interview with Mr. W. Nedoshytko, Andriy Nahachewsky, July 18, 1983.

81. Personal Interview with Mr. Mike Rusnak, Demjan Hohol, June 4, 1983.

82. Personal Interview with Mr. William Olynyk, Demjan Hohol, June 7, 1983.
Group discussion at Smoky Lake Foundation Bar-V-nok, Andriy Nahachewsky, June 16, 1983.

83. William Kurelek, The Ukrainian Pioneer (Toronto: Niagara Falls Art Gallery, 1980), p. 46.

84. Telphone Interview with Mrs. Verna Topolnisky, Andriy Nahachewsky, July 25, 1983.

85. Personal Interview with Mr. Mike Rusnak, Andriy Nahachewsky, June 16, 1983.

86. Note the posts in the Yankovsky root cellar (Figure 34).

D. Early Rural Architecture in Alberta

87. For example, Barbara Oringderff. True Sod: Sod Houses of Kansas (North Newton, Kansas: Mennonite Press, 1976), and Roger L. Welsch, Sod Walls: The Story of the Nebraska Sod House (Broken Bow, Nebraska: Purcells, Inc., 1968).

88. Charles R. Goins and John W. Morris, Oklahoma Homes Past and Present (Norman: University of Oklahoma Press, 1976), p. 31.

89. Everett Dick, The Sod House Frontier (New York: D. Appleton-Century Company, 1937), as quoted in Welsch, Sod Walls, pp. 23-34.

90. Tony Cashman, A Picture History of Alberta (Edmonton: Hurtig Publishers, 1979), p. 59.

91. Welsch, Sod Walls, p. 101.

92. Ibid., p. 30.

93. Ibid., p. 102.

94. Oringderff, True Sod, p. 31. The half-sod, as Oringderff calls it, produced much the same silhouette as Prykhodko's napivzemlianka. The vertical walls were partly underground and partly built up with sod. The sod walls were weight bearing and generally eliminated the necessity for supporting poles under the roof.

95. Ibid., and Welsch, Sod Walls, p. 102.

96. Welsch, Sod Walls, p. 25.

Chapter II: Historical Context

Chapter II: Historical Context

A. Ukrainian Immigration to East Central Alberta

The history of Ukrainian immigration to Alberta and all of Canada has received attention in various studies and publications.[1] Repetition of these materials in the present work has value only insofar as it sheds light on the circumstances under which a great many Ukrainian immigrants built temporary dwellings for shelter.

Talk of immigration began to circulate in overcrowded Galicia in the last decades of the nineteenth century. On the one hand, the peasantry were strongly motivated to leave for the United States, Siberia, South America, Canada, or anywhere else they might escape the landlords, the debts, the taxes, and the almost constant shrinking of their landholdings. The future in their own home seemed to offer only more of the same. On the other hand, most had never ventured far from their land. The journey would cost them most or all of their savings, as well as relatives, friends, and practically everything familiar to them. That which was unknown was certainly frightening.

Mr. Iwan Pillipiw, one of the two first Ukrainians to come to Canada in 1891, returned to his village to take his family and that of his companion Wasyl Eleniak, back to Canada.

> . . . People came to my house. It was full of people, each one asking me over and over again, 'Where have you been?'
>
> The people couldn't understand how, across the sea, there was free land without any landlords, which one could get for nothing or next to nothing. They listened to what I had to say and were amazed. Word spread among the villagers that a man had returned from God-knows-where and wanted to lead people to some place called America and God-knows-where else.[2]

The ramifications of such a journey were incomprehensible to some. Stories and rumors about the distant lands were often strange and unbelievable. It was difficult to separate truth from fiction. Some described huge tracts of land and immeasurable prosperity. Others spoke of deceit, heartbreak and even death. Descriptions were circulated, folklorized, and argued, passing from conversation to conversation and from village to village.

In 1895, Dr. Iosyf Oleskiv made a trip to Canada to assess the possibility of settling large numbers of Ukrainian peasants in the prairies. He envisioned Canadian colonization as an organized and controlled project. Agencies and governments on both sides of the ocean were to service and protect the peasants. In a letter to the Canadian Minister of the Interior during the trip, Oleskiv wrote:

> I must confess of my being disappointed as to the extent of free lands in Canada . . . Notwithstanding I believe there is to find land in greater extention perhaps north of St. Albert, or between Yorkton and Prince Albert district, and therefore I will hold up my idea of populate the Northwest Canada's, but I would do it in my conscience under following conditions, which I am so free to propose to you. The people . . . will be organized on a cooperative basis as companies of farmers, because the singel farmers would not succeed. These companies receive on the arrival on their grounds bonusses of at least $50-60 per each homestead, taken up by a member of company. The company warrant, that the homestead, for which is paid bonuss, will not be abandoned, respective will be settled again. The bonusses will build a fundation store of an institution, which shall make easier the life of farmers. At first the institution which will be whole under controll of companies, will serve to common buying of such objects as seed, victuals, stoves, agricultural machines and tools etc. then to common purchase of products, to building of elevators, mills, establishing creameries, cheese factorys . . . etc.[3]

The Canadian government was seriously interested in populating the northwest, though some of Oleskiv's suggestions, such as the sixty dollar grant per homestead, seemed completely unrealistic. The Austrian government, for its part was opposed. This concept threatened to deprive the landlords of their cheap labour, and to disrupt their economy. Oleskiv's plans for a systematic settlement of Galicians in Canada were never realized to any significant extent. Emigration soon boomed, however, and the peasants boarded ships by the thousands, each taking the ultimate responsibility and risks onto themselves.

The journey was, indeed, not without risks. Aside from necessary hazards associated with intercontinental travel, their routes were constantly being monitored by an increasing number of businessmen and opportunists, eager to deal with the naive and unsuspecting peasant.

> The steamship agents . . . were principally concerned with commissions, bonuses, and whatever other legitimate and sometimes less-legitimate benefits they could reap from a prospective immigrant.
>
> . . . Steamship agents were particularly active in the province of Bukovyna, from which great numbers of people emigrated during 1897 and 1898. These were mostly of the poorer peasant class, who arrived in Canada without any means at all, misled by the promises given by the steamship agents that the Canadian Government would support them in various ways.[4]

The peasants were especially susceptible to exploitation considering their ignorance of other countries and travel in general. For many, this was their first experience beyond a few neighbouring villages.

If they realized the importance of being informed, there were several sources available to the peasants, from which they could learn about the new country. Aside from critically evaluating the stories that were being spread, the farmer could make an effort to consult an "authority." Dr. Oleskiv lectured publicly, and was swamped by individuals and delegations requesting additional information and advice.[5] Other people had gained a reputation for knowledge of these affairs as well.

Even prior to his tour, Dr. Oleskiv had seriously researched the possibility of Canadian immigration and had published a booklet Pro vilni zemli (About Free Lands) in July of 1895.[6] As soon as he returned from Canada in that same year, Oleskiv prepared a second booklet dealing with

Canada called *O emigratsii* (About Emigration).[7] The booklets offered a good basic introduction to Canada and were written specifically in the interests of the peasants. Not all had access to the booklets, however, and not everyone appreciated things that they did not understand.

Letters eventually started arriving in Galicia from relatives and neighbours who had emigrated. The new Canadians often engaged in their own publicizing. The sooner they could convince neighbours to emigrate, the sooner their own lot would improve. Letters from Canada, especially if they contained money, played a significant role in motivating further emigration.

The Svarich family history serves as an example of a well prepared group of immigrants.[8] The family left their village near Sniatyn in Galicia with a large group in the spring of 1900. They had planned the move for several months before actually leaving. The two sons of Ivan Svarich were both literate and spoke several languages, including German. One son, Peter, spent the winter studying English books (*tlumachi*) to learn as much English as he could. The family surely made an effort to familiarize themselves with Oleskiv's booklets and any other available relevant literature. Neighbours respectfully called Peter "*panych*" (a young lord) and often asked him for advice about what to expect, what to bring with them, and other issues. When the family did arrive in Canada, they had sufficient money and a concrete plan to establish their homestead before winter. They succeeded in their plans.

In contrast, a great many immigrants left their homes without a clear picture of their destination or with distorted expectations. Some had been misled by the flattering talk of the agents who sold their tickets. Others had been pressured to go, or had simply been swept along by the momentum of fellow travellers. Still others were taking a major risk in sheer desperation.

After a train ride to a European port city, the trip to Canada usually involved a frightening and unpleasant sail to Halifax, Quebec, or Montreal. At the point of landing, the settlers waited for immigration clearance and arrangements for train accommodation.

> . . . and then the start of the long ride west. It was when they had passed through parts of the rocky terrain

> in Ontario that some of them were beginning to wonder whether all of this country was not similar to this and worried them about the sanity of their move . . .[9]

The Canadian Pacific Railroad had been built to Calgary by 1883, and was in operation well before Ukrainian immigration began.[10] The earlier settlers generally travelled via Calgary, then north by stage coach, wagon, on foot, or by train on the 1891 track which joined Calgary with Strathcona.[11] From Strathcona they filtered out towards the north and east. By December of 1905, the main Canadian National Railway track was completed to Strathcona through Saskatoon, Lloydminster and the fledgeling Vegreville.[12]

Some immigrants had no destination in mind as they headed west. They knew only that they had to stay together with their group. Without the group, they would be lost anywhere in this strange land. Other settlers had narrowed their destination to Manitoba, or the colony near Edna in the Northwest Territories (now Star, in Alberta). Still others wanted to go directly to the land of a relative or acquaintance with whom they had been in contact.

Winnipeg and Strathcona were the two most important colonization centers in western Canada. Once they arrived, many immigrants proceeded to the Immigration Building, where the formalities of selecting and claiming one's homestead eventually took place.

B. Homestead Selection

Pioneer memoirs and other sources readily ascertain that one of the prime considerations of the Ukrainian settlers in choosing land was the close proximity of friends and family. For many newcomers, the most striking and disconcerting feature of this new country was its emptiness. The psychological and material security of a larger group was absolutely essential for some. The earliest Ukrainian settlements in Alberta (this area actually belonged to the Northwest Territories until 1905) clustered around Edna-Star. Large groups, sometimes half a village, travelled together from Europe and usually wanted to stay together in Canada. This feature of settling in compact colonies had been a major concern since Oleskiv had outlined his colonization scheme[13] and even earlier.[14]

A second major concern of the immigrants while selecting a homestead was that their land have trees on it. Wood for fuel and as a building material had been very expensive in Austro-Hungary, since the forests were under control of the landlords. Under these conditions, wood had long been considered a valuable commodity and the immigrants were determined to be self sufficient. Immigration officials noted this strong preference with some surprise.

> These Galicians are peculiar people; they will not accept as a gift 160 acres of what we should consider the best land . . . that is first class wheat growing prairie land; what they particularly want is wood, and they care but little whether the land is heavy soil or light gravel; but each must have some wood on his place.[15]

In spite of the above comments, the quality of the soil was indeed a third major consideration in selecting land. The repeated references to this subject in Oleskiv's documents testifies to this,[16] as does the practice of changing homesteads if the first selection proved to be unsuitable.[17] The importance of good land became increasingly apparent after several years of farming, since the poorer land required more work and brought a smaller yield.

The task of selecting 160 acres of land must surely have been a highly emotional experience for the peasant, since the land represented that goal which they had dreamed of. A comparably sized holding in Austria would have made the family very wealthy indeed. The future of the farmer and his family was to be built upon this base. With thoughts such as these, the immigrants naturally wanted to reach that destination and secure a homestead as soon as they possibly could. This sense of urgency was heightened by the physical exhaustion and stress of the journey. Added to these sensations, the farmer also had to cope with the frustration of realizing that it was impossible to view each area. There

Table 8: Primitive Type

Arrival, Homestead Selection, Journey

	via Strathcona	family stays together	man travels ahead	family waits in Strath.	family waits elsewhere	family waits in Europe	money on hand	no money	contacts known	no contacts	arrival in spring	other season	concrete destination	direct to homestead	temp. residence < 1yr.	temp. residence > 1yr.	change homesteads	move after marriage	walk to homestead	raft	hired wagon	govt. wagon	relative's wagon	own wagon
Bulavka		x						x		x				x								?		
Lackey		x						p		p											?	?		
Lackey, 2		x						p		p											?	?		

Table 9: Deep Hole Type

Arrival, Homestead Selection, Journey

	via Strathcona	family stays together	man travels ahead	family waits in Strath.	family waits elsewhere	family waits in Europe	money on hand	no money	contacts known	no contacts	arrival in spring	other season	concrete destination	direct to homestead	temp. residence < 1yr.	temp. residence > 1yr.	change homesteads	move after marriage	walk to homestead	raft	hired wagon	govt. wagon	relative's wagon	own wagon
Huculak																								
Kitz		p						p								p								
Nimchuk		p																						
Tkachuk, M.		x							x		x		-	x		x	x							
Tokaruk		p									x			x										

Table 10: Slanted-Roof Type

Arrival, Homestead Selection, Journey

	via Strathcona	family stays together	man travels ahead	family waits in Strath.	family waits elsewhere	family waits in Europe	money on hand	no money	contacts known	no contacts	arrival in spring	other season	concrete destination	direct to homestead	temp. residence < 1yr.	temp. residence > 1yr.	change homesteads	move after marriage	walk to homestead	raft	hired wagon	govt. wagon	relative's wagon	own wagon
Archiniuk																								
Bar-V-nok																								
Berisina(S,U))	-																							
Bordian	x	x						x		p		x		x								p		
C.A.																								
Chmilar											x			x										
Dmyterko		-	x					x	x				-			x			x					
Educ. Report																								
Eurchuk (S)	-		x	x					x		x		-		x				x				x	
Harasewich																								
Hawreliak																								
Hilkow			x			x		p						p										
Jubilee book																								
Kurelek, 1																								
Kurelek, 2																								
Kurelek, 3																								
Lazhovsky		x						x	p		x		-	-		x								x
Lepatsky								x																
Malayko																-								
Natchuk																								
Osinchuk	x	x							x				x		x						p			
Ruptash								x																
Sachkiw																								
Shandro, N.	x		x	x			p			x				x						x				x
Shandro, S.	x	x		x						x				x										x
Shemko	x		?	x							x										x			
Socholotoski																								
Svarich	x		x	x			x		x		x				x				x					x
Svarich, 2																						p		
Zabrick													-				x							
Zazula																								

Table 11: Log-Wall Type

Arrival, Homestead Selection, Journey

	via Strathcona	family stays together	man travels ahead	family waits in Strath.	family waits elsewhere	family waits in Europe	money on hand	no money	contacts known	no contacts	arrival in spring	other season	concrete destination	direct to homestead	temp. residence < 1yr.	temp. residence > 1yr.	change homesteads	move after marriage	walk to homestead	raft	hired wagon	govt. wagon	relative's wagon	own wagon
Basaraba														x										
Bodnarek			x													x		x						
Danelesko 2			x													x		x						
Halitsky	x		x		x					x	x			x	x				x		x			
Herasym																								
Hushulak		x								p		x		x										
Iwaschuk																		x						
Krawchuk																								
Kurylo																								
Sawchyn (S)																								
Serna																								
Shipko			x					p								x			p					
Swyschuk	x	x																						
Tkachuk, P.																	x							
Yushko																								

Table 12: Unknown Type

Arrival, Homestead Selection, Journey

	via Strathcona	family stays together	man travels ahead	family waits in Strath.	family waits elsewhere	family waits in Europe	money on hand	no money	contacts known	no contacts	arrival in spring	other season	concrete destination	direct to homestead	temp. residence < 1yr.	temp. residence > 1yr.	chance homesteads	move after marriage	walk to homestead	raft	hired wagon	govt. wagon	relative's wagon	own wagon
Achtemechuk																								
Achtymichuk	x	p														x					p			
Adamowsky (S)		x							x				x	x	x						x			
Andreas	x	x								p				x							p	?		
Bar-V-nok 2																								
Basilian Priests																								
Bachaneskey	x		x			x		x			x										x			
Buk																								
CNR																								
Danelesko, 3	p		x										-						x					
Dugger	p					-							-		x		x							
Ewanchuk, N.		?																						
Ewanchuk, O.			x															x						
Ewanowich	x	x							x				x		x					x				
Farus	x	x					x		x			x	x		x				x		x			
Filipchuk		p										x												
Gawryluk			x			x																		
Gorgichuk																								
Haluschak			x			x																		
Hamaluk		p												p										
Hrudey		p												p		x								
Humeny	x		x			x		x	x															
Hunka	x	x								x	x		-	x										
Kapitski	x		x			x		x		x						x					x			
Kepharuk																								
Klapatiuk	x	x						x		p			x	x							x			
Klewchuk	x	x						x						x							?			?
Knysch		p												p										
Kashman, A.			x			x		x						-										
Koshman, K.	x										x		x		x					x	x			
Kostyniuk	x	x					x					x	x	x										x
Kozak	x	x				x		x	x							p					?		?	

Table 12: Unknown Type (cont'd)

Arrival, Homestead Selection, Journey

	via Strathcona	family stays together	man travels ahead	family waits in Strath.	family waits elsewhere	family waits in Europe	money on hand	no money	contacts known	no contacts	arrival in spring	other season	concrete destination	direct to homestead	temp. residence < 1yr.	temp. residence > 1yr.	change homesteads	move after marriage	walk to homestead	raft	hired wagon	govt. wagon	relative's wagon	own wagon
Kyca																								
Lazaruk	x	x						x	p					x	x						?		p	
Lichuk		x						x		x	x		x	x					x					
Logozar																								
Lupaschuk	x	x						x			x			x							?			
Maga																								
Marianicz																x	x							
Melenka																								
Moisey	x	x	x			x								x								x		
Myshliak								x							x		x							
Nedoshytko																								
Nikiforuk	x		x			x		x		x			-	-	x				x					
Orydziuk	x		x						x				-	-	x				x					
Palamarchuk			x					x	x				-	-	x			x						
Pawliuk									x				-		x									
Pawliuk, P.																								
Presizniuk	x		x	x										x							x			
Ropchan																								
Ruptash																								
Russo-Othrodox Monks																								
Skoreiko			x			x			x		x		x	x					x				x	
Slemko																								
Stratichuk	x							x	x		x				x				x					
Sydor	-	x			x									x	x						x			
Tanasichuk																								
Tkachuk, E.																								
Tomyn, E.																								
Topolnicki								x								x	x							
Topolnitsky	x	p																						
Wozymirsky																								
Yakoweshen	x								x		x												x	
Zukiwski	x		x					x	x									x			x			

might always be a place better than the one he was considering. On the other hand, land was being claimed each day, and any delay may result in the loss of his chosen land as well.

The technical aspects of selecting a homestead were also not without their difficulties. Many of the immigrants were completely illiterate, and hardly anyone could read in English. Aside from the fact that they were promised a large piece of land for ten dollars, many knew little about the 1872 Homestead Act and its various stipulations.

> The whole country is divided into squares, sections of 640 acres each. A settler and his family, or a single man over 18 years of age, can obtain a quarter of such a section. Each section has a number. Along the railway lines on both sides of them to a depth of four miles, odd-numbered sections belong to railway companies. In less-densely populated parts of the country they are sold at $3 per acre, with 10 years to complete the payments. Even numbered sections belong to the government, and are given away as homesteads . . .
>
> The settler receives the patent of ownership after three years, provided he can prove that he was residing on the land at least 6 months each year, that he built a house, and that he has brought under cultivation a certain amount of land.[18]

Even with this basic introduction from Oleskiv's Pro vilni zemli, the settler still needed to learn more. It was essential to know which lands belonged to the Crown, which to the Hudsons Bay Company, which to the railways and which lands were designated as homesteads. Of those lands for settlement, an immigrant needed to be told which had already been claimed, and which were still vacant. A matter as fundamental as reading the marks on the survey posts sometimes presented a major obstacle.

As the colonies became established and spread out, certain farmers gained reputations for being able to "read" the posts (chytaty slupiv) and for helping newcomers find land (ti shcho rozdavaly farmy) - literally - those who gave out the farms. A Mr. Protsinsky near Edna, for example, was known for this by 1900,[19] and a Mr. Dovbush near Mundare was recommended to many at about the same time.[20] Since new immigrants were constantly arriving, there was very often an element of uncertainty as to what lands were still available for claim, especially in newly opened areas. Some immigrants travelled directly to a vacant quarter and set up their shelter, intending to formalize their claim after settling in, or intending to continue their search from this temporary base. The remains of a dug-out dwelling built by such squatters on C.N.R. land was discovered by one farmer when he bought the land in 1926:[21] "At first, nobody knew what land would be his farm . . ."[22] In another case, a family travelled from Edmonton to Andrew

> . . . where they began to build a log dug-out cabin for shelter. After they had finished building it, they were told to move because they had settled in the wrong location. They . . . moved . . .[23]

C. Journey to the Homestead

Three important factors affected the immigrants' first days in the new country and their journey to the homestead. These were money, contacts, and timing. If the newcomers had some cash, knew where to go for help, and came early in the spring, they were quite well off. They could look forward to a relatively manageable transition into life in Canada. Those who lacked these assets could have expected a corresponding increase in hardship and suffering.

In his Pro vilni zemli, Dr. Oleskiv emphasized that settlers required a sufficient amount of money before they should venture off their land.

> . . . First of all, there is the great distance to travel . . . transportation alone would cost 150 florins per person . . .
>
> In order to make a living on the land given to them, one should have enough money to be able to live after arrival until the next crop is garnered, to be able to buy a pair of oxen for the ploughing as well as implements for husbandry, or at least enough ready money to be able to hire a neighbour of longer standing to do the plowing. The first settlers who emigrate must also

> have a few hundred florins in cash for the upkeep of their families . . .[24]

Those who heeded this advice and had time to prepare for the journey came better prepared to the new land. They sold their fields, their house, their animals, and many of their possessions. A part of this money was spent for the travel tickets (shifkarty), and the rest was hidden away until it was needed in the new land.

In a great number of cases, however, the situation was not as ideal. Poverty was often the main motive for leaving, and even after selling their property, the emigrants may have had barely enough money for transportation. Land values dropped during the emigration boom, making matters worse for the poor. After deciding to emigrate, many peasants borrowed money from credit unions, inkeepers or loan sharks. Because of the inflated interest rates, they borrowed only enough to cover immediate and foreseeable expenditures. Delays during travel, costs of food en route, and smooth-talking swindlers depleted the peasants' cash supplies. By the time they finally reached their farms, many had little or no money left at all.

A second important factor affecting the newcomer's position was having a contact. Anyone with a bit of experience could help ease the frustrations of the language barrier, the regulations, and other problems that the peasant had never before encountered. This person could be a relative, a friend who had emigrated earlier, a fellow newcomer, the immigration agent, or even a stranger who offered to help. In all of these cases, the contact person could orient and direct the new arrival, explaining the necessary procedures, advising in critical decisions, and sometimes offering food and shelter.

Some immigrants were met immediately at Strathcona by a relative with a wagon.[25] The entire family and baggage was carted to the relative's homestead, where they could rest and recuperate from the journey. The hosts often recommended a neighbouring homestead for claim. In several instances, they offered their own dwelling to be shared with the newcomers for the first winter or until they could set up their own farm.[26] This security contrasted with those families who sat exhausted in Strathcona, not knowing where to start, or those who found themselves alone in the wilderness.

The third critical factor affecting the lot of the immigrants was the timing of the arrival. Unless the family planned on staying with an earlier immigrant, it was a great advantage to arrive in the early spring.

> . . . this will enable the settler to put in some potatoes and to sow some grain on his plowed acres. Toward the summer, only those who intend to work during harvest time to earn some additional money to start farming should emigrate. Nobody should venture to Canada in the late autumn or early winter because he will have difficulty in finding work and will have to spend his money, perhaps his last cent, to live through the winter . . .[27]

Pioneer biographies do indeed show that the most common time for arrival was spring, though other factors may have overruled such a preference.

Whatever season their train stopped at the station, the settlers had not yet finished their journey. The last span of the journey was covered by a variety of means. Some immigrants walked to their destination.[28] A few built rafts and floated down the North Saskatchewan River.[29] Most commonly, however, this distance was covered by wagon, pulled by a team of horses or a yoke of oxen. The immigrants often hired a wagon and paid up to twenty dollars to be taken to some specific destination.[30] Government arranged wagons sometimes moved the pioneers onto a prospective homestead. The fee, comparable to private rates, could be paid later.[31] Still other immigrants were offered a free ride from friends, relatives, or a fellow traveller.

The journey to the homestead was not always direct, and in many cases, the travellers had to wait quite some time before they were finally settled. Often, the families with children were left to wait in the Immigration Building in Strathcona or at some farmer's home while the head of the family travelled out to find a homestead and possibly to prepare a shelter for the family. The men sometimes travelled alone during this search,[32] and sometimes in groups.[33] Occasionally they were even accompanied by an immigration agent.[34] The Svarich and

Kostash families waited first in Edmonton while the men selected the land. When the group later set out together, the women and children were left behind for a second time at an acquaintance's farm while the men went on to build their first shelter.[35]

Those families who did not travel to their homesteads immediately were delayed by a lack of money, not knowing where to go, or both. They sometimes stayed in Edmonton for a while, hoping to find a job[36] and/or trying to get themselves oriented. In the latter case, the main issue was usually a matter of which way to go. Once a credible suggestion was offered and understood, the immigrants generally set out.

Once in the countryside, the family still may not have found a homestead. In some cases, they searched for an established resident who would agree to shelter them temporarily, or they simply stopped and set themselves up wherever they thought was suitable. Once immediate shelter had been secured, the travellers could rest or continue their search.

D. Shelter Upon Arrival

Several weeks after leaving their familiar villages in Austria, many immigrants found themselves in a vast wilderness, dealing with the fundamental necessities of survival.

> Many questions immediately arose, each demanding an immediate response. How could we take care of ourselves, so as not to perish? How and with what could I protect my family? Where could I go with them? What should I do, where should I start? How and with what could I build a shelter for my family? Where and with what could I acquire some type of domestic beast for work and for sustenance? It was impossible to answer these questions, since there was not a penny in my pocket.[37]

In the more fortunate cases, food and shelter were provided by relatives or old country neighbours. The hosts often shared their dwellings with the newcomers, crowding together for a week, a winter, or as long as it took to become independent.[38] If the earlier immigrant had built himself a second dwelling, the newcomers often occupied the vacant first shelter. Theodore Nemirsky, one of the earliest and more prominent settlers near Wostok, often housed immigrants for short periods of time in his first log house.[39] By that time, Nemirsky had built a second, larger house for his own family. In other cases, the immigrants may have simply stopped at a stranger's house towards evening, and asked for a place to sleep.[40] The code of hospitality ensured that the travellers would eventually be successful. This kindness was motivated by the knowledge that a reciprocal favour may be very important in the near future. People were often lonely in this sparsely populated land.[41] Especially if the visitor was a fellow Ruthenian, each farmer wanted to make a good impression and possibly even attract a prospective neighbour.

Offering help when necessary was important, though it was also essential to take care of one's own interests as well. Earlier settlers may have charged a rent for the room in some circumstances. This occured more often if the newcomers stayed for an extended period of time[42] or if they imposed upon strangers.[43] In some cases this rent was paid in cash. Mr. George Danelesko paid fifty cents for a one night stay at a home in Mundare when he was unloaded there by train.[44] In other cases, some article of value, such as a stove (shparhat) may have been offered in exchange for housing a family for a given period of time.[45] Alternately, a tenant may have been asked to help with the work to pay for his stay.

In a great number of cases, however, immigrants did not stay with other people at all. They depended on themselves alone. Some of these had been unloaded with all their possessions in an empty field. If they did have neighbours, they did not know where they might be or how to communicate with them. Such a family was often afraid to divide up and unwilling to desert their heavy belongings. Certain immigrants insisted on finding and occupying their own property as soon as they possibly could. They knew that the procedure for gaining land titles included occupation of the land itself. Others must have felt that there was, really, nowhere else to go.

These travellers often slept under the stars for the first few nights.[46] If necessary, this could continue through the summer, though the cold or the mosquitoes usually made this very uncomfortable. If the family owned a wagon, they could protect themselves a little by crawling under it, covered with horse blankets (verety), and anything else that would serve the purpose.[47] Canvas tents were commonly used by construction crews, work gangs, and other groups at that time. If the Ukrainian settler had acquired one, it may have served the purpose of a temporary shelter.[48] Some immigrants came upon an abandoned structure and occupied it as long as was necessary.[49]

One other alternative for shelter, more central for the purposes of this study, was to construct some type of temporary shelter. These shelters in some cases were assembled in a few hours with no tools at all. They did little to shelter their inhabitants from the rain or the mosquitoes, but at least offered a softer, warmer space in which to sleep. Other temporary shelters were built more deliberately, and may have taken several weeks to construct. Sometimes they were quite large, and may have served as the dwelling for a number of years. A great many of these temporary structures, built by Ukrainian pioneers, were dug into the earth.

Most immigrants envisioned their own farms as including a house, a garden, livestock, fowl, and wide cultivated fields. This dream would materialize for most of them, though it would take a great deal of work, and lay quite some time in the future.

ENDNOTES

Chapter II: Historical Context

A. Ukrainian Immigration to East Central Alberta

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15. A letter from W. R. McCreary to J. A. Stuart, May 18, 1897. Public Archives of Canada 34214(1), no. 37519. Quoted in Kaye and Swyripa, "Settlement and Colonization," p. 47.

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20. Personal Interview with Mr. George Danelesko, Andriy Nahachewsky, August 4, 1983.

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C. Journey to the Homestead

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D. Shelter Upon Arrival

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43. Personal Interview with Mr. George Danelesko, Andriy Nahachewsky, August 4, 1983.

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46. Nancy Andreas, "Gabriel Andreas Family" biography, Dreams and Destinies, p. 275.

47. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich dug-out, Andriy Nahachewsky, August 2, 1983.

48. Telephone Interview with Mr. Nick Zukiwski, describing the Shemko history, Andriy Nahachewsky, August 3, 1983.

49. Personal Interview with Mrs. Josephine Sachkiw, describing the Myshliak history, Andriy Nahachewsky, June 14, 1983.

Chapter III: Temporary Dwellings

Chapter III: Temporary Dwellings

A. Incidence

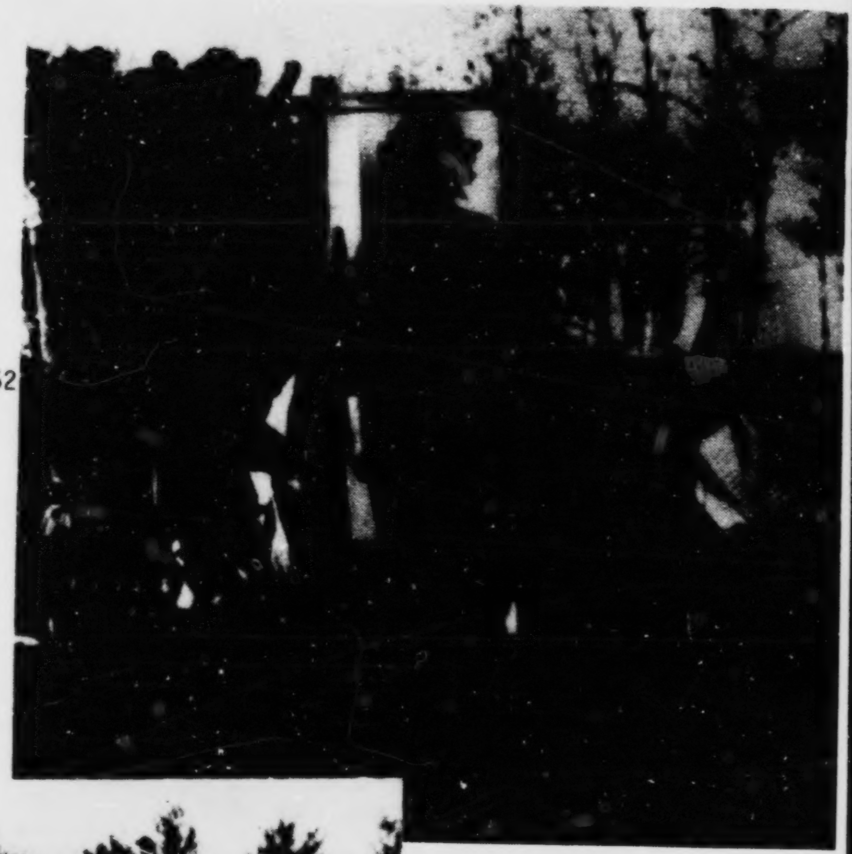
As can be expected, the incidence of temporary dwellings in Canada is closely associated with the arrival of the first Ukrainian immigrant families to the prairies. In 1891, Ivan Pillipiw and Wasyl Eleniak, the celebrated first immigrants to Canada, arrived without their families. They stayed with German farmers while searching for their own good land, and were likely supplied with room and board while working.[1] In any event, a single man could generally fend for himself without any elaborate lodging. Rooms were often supplied to workers when it was cold.

Within a year of Pillipiw and Eleniak's arrival, a group of six families and one single male left Galicia for Canada. These peasants eventually settled in Alberta to establish the colony of Edna-Star, the seed of the Ukrainian block district in east-central Alberta. Once women and children arrived, it was no longer possible to live indefinitely without a specific home. By 1895, the trickle of Ukrainian immigration was opening into a flood, and thousands of new settlers were finding themselves on the surveyed townships of the northwest. Temporary dwellings, in most cases, were built within the first months of arrival, and were most common in newly populated areas.

After several years had passed, most immigrants were relatively established, and newcomers arrived to at least partially populated lands. By 1905, the peak period for building burdei and budy was over, though such structures could be found in significant numbers up to the start of the First World War, when emigration was cut off.

Primitive and dug-out shelters became scarce after this point, though at least one case is attested as late as 1962.[2] A single man, Alex Dmyterko, had been a soldier and a prisoner of war in Europe before coming to Canada in 1928, alone and destitute. He worked variously for two years, earning room and board in the winter and saving some cash in

Figure 43: Mr. Alex Dmyterko in front of his home, a slanted-roof dug-out, 1962, five miles north east of Waskatenau. (Photograph taken in 1962 by Mr. Nick Cebuliak.)



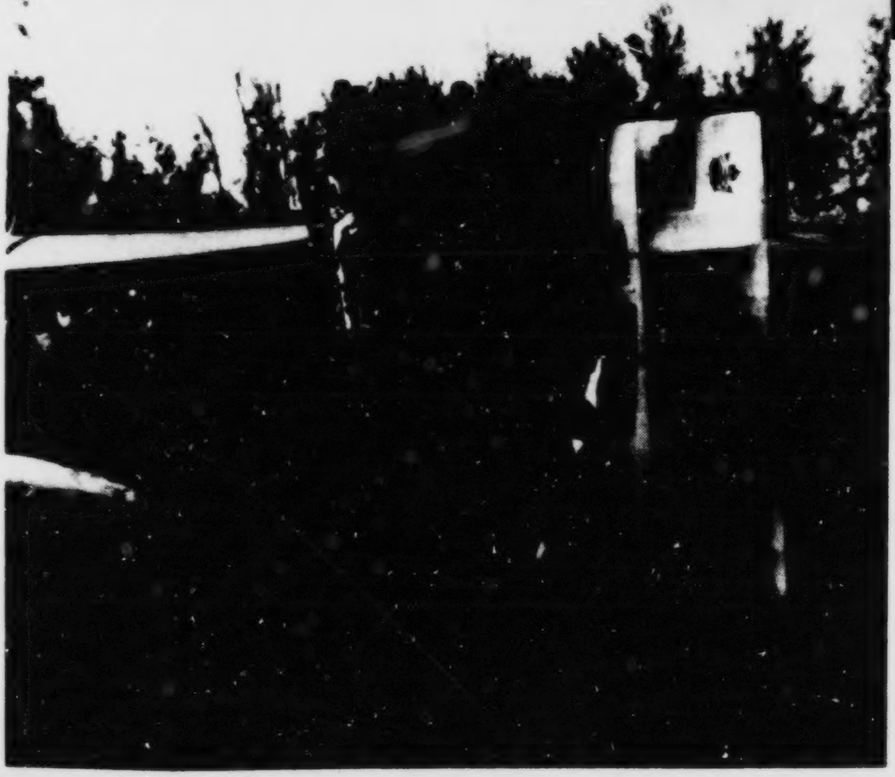


Figure 44: Entrance of the Alex Dmyterko dug-out, 1962. (Photograph taken in 1962 by Mr. Nick Cebuliak.)

the summer. In 1930, he bought a quarter section of land, spending all the money he had. This dug-out shelter did not cost him a penny to build. He dwelt in it for over thirty years. He felt free and happy on his own property, and did not want to leave it even later, when he had the chance.

In another exceptional case, a group of Russo-Orthodox monks owned land (SE 2-59-15 W4) where they lived a rather spartan life of semi-seclusion. They apparently built and dwelt in primitive semi-earthen shelters in the 1940s and later.[3] These structures, if actually dwelt in, were likely used in special periods of meditation, since more substantial dwellings had been erected on the property prior to this time. Unconfirmed reports suggest relatively similar events taking place in association with the Basilian priests near Mundare.[4] Cases such as these, however are extremely rare. The great majority of the structures of interest in this report were built in the ten year period from 1895 to 1905.

Geographically, the phenomenon of primitive temporary dwellings seems to have extended to all areas settled by Ukrainians to that time. The distribution of case studies for this project, Map 1, cannot be considered representative of the distribution of the phenomenon, because of the small size of the sample. Research methodology has produced a definite bias in the distribution, favoring the Andrew district. Map 2 illustrates the distribution of these pioneer structures within the Andrew district itself. At least some trends of distribution may be discerned in this area. The land directly north of Andrew was good farming land which remained primarily unoccupied until the turn of the century, when it was filled quickly by Ukrainian immigrants.[5] It corresponds with an area of increased incidence. The land farther to the north and northwest of the town was sandy, of poorer quality. It was not settled until the 1920s. By that time, settlers could more easily establish themselves without resorting to primitive shelters. The land around and especially east of Whitford lake had been settled by Scots and Metis farmers prior to the arrival of the Ukrainians. As a result, the incidence of Ukrainian homesteads and temporary shelters there is low as well.[6]

Figure 45: Remnants of a primitive structure used by Russo-Orthodox Monks, north of Wasel, Alberta. Built in the 1940s. At least two such structures existed on the site. (Photograph taken in 1983 by Andriy Nahachewsky.)

Similar groupings and patterns can be identified all across the prairie provinces, affected by natural conditions, various groups of settlers, and the timing of their arrival. The Ukrainian immigration to Saskatchewan and Manitoba proceeded in an almost identical context. As such, it can be expected that the incidence of temporary and dug-out dwellings in those provinces also relates closely to their rural settlement patterns at the turn of the century.

The length of occupancy of temporary dwellings varied with the circumstances and priorities of the occupants. Very primitive shelters may have served for only a few days or a few weeks, during which time a more substantial shelter was built. (In some cases, the second shelter, too, was designed only for temporary use.)

Map 1:

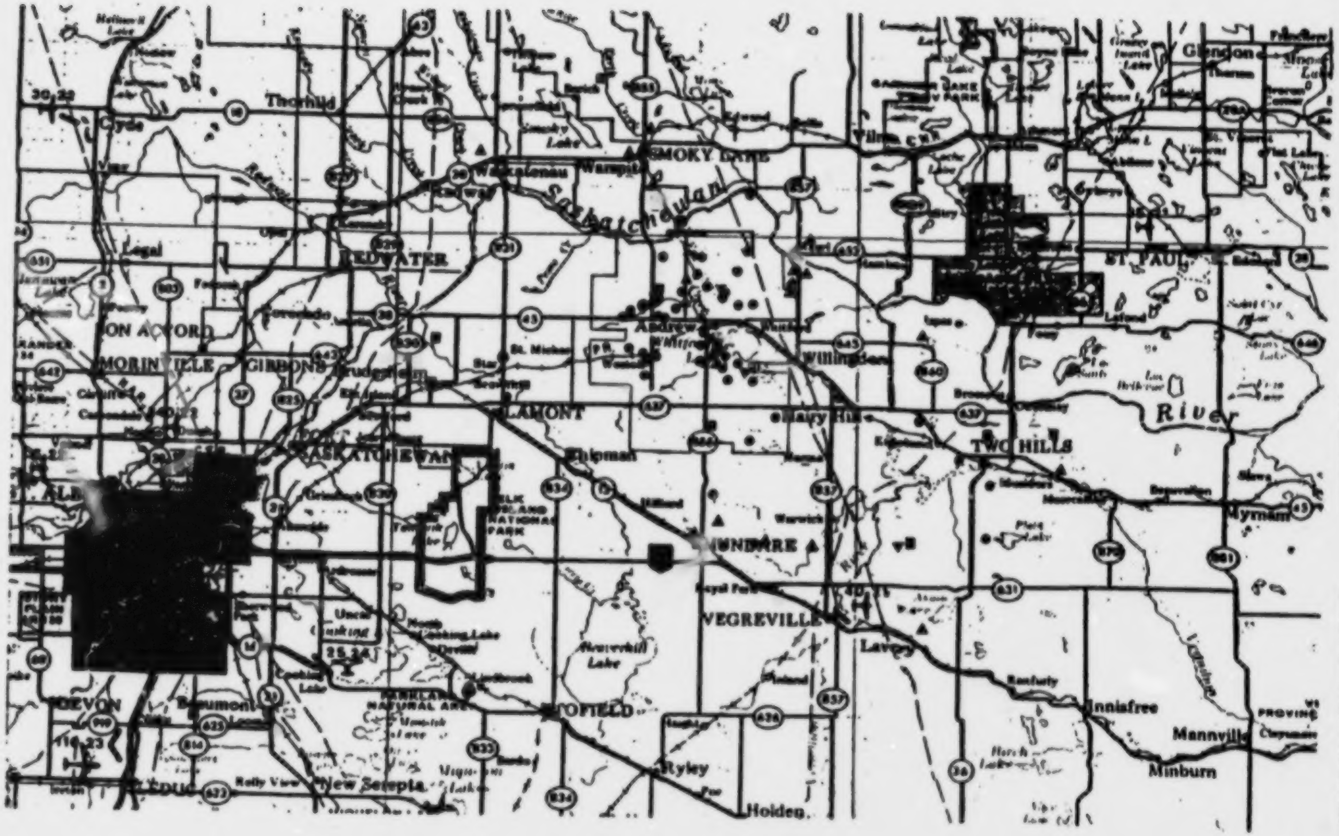
Recorded Incidents of Ukrainian

Temporary Shelters in Alberta

Legend

- ▼ Deep-Hole Type
- ▲ Slanted-Roof Type
- ■ Log-Wall Type
- ● Unknown
- — Boundary of the Andrew District

(Source: Surveys and Maps. Department of Energy, Mines and Resources, 1978.)



Thorhild
Clyde
Legal
BON ACCORD
MORINVILLE
GIBBONS
REDWATER
Bruderheim
Waskatenau
Warspite
SMOKY LAKE
Saskatchewan
Vilna
Glendon
ST. PAUL
Andrew
Willingdon
LAMONT
FORT SASKATCHEWAN
ELK ISLAND NATIONAL PARK
Chipman
Hairy Hill
TWO HILLS
River
Myrnam
MUNDARE
VEGREVILLE
Lavoy
Innisfree
Mannville
Minburn
TOFIELD
Ryley
Holden
DEVON
Beaumont
New Sarepta

Map 2:

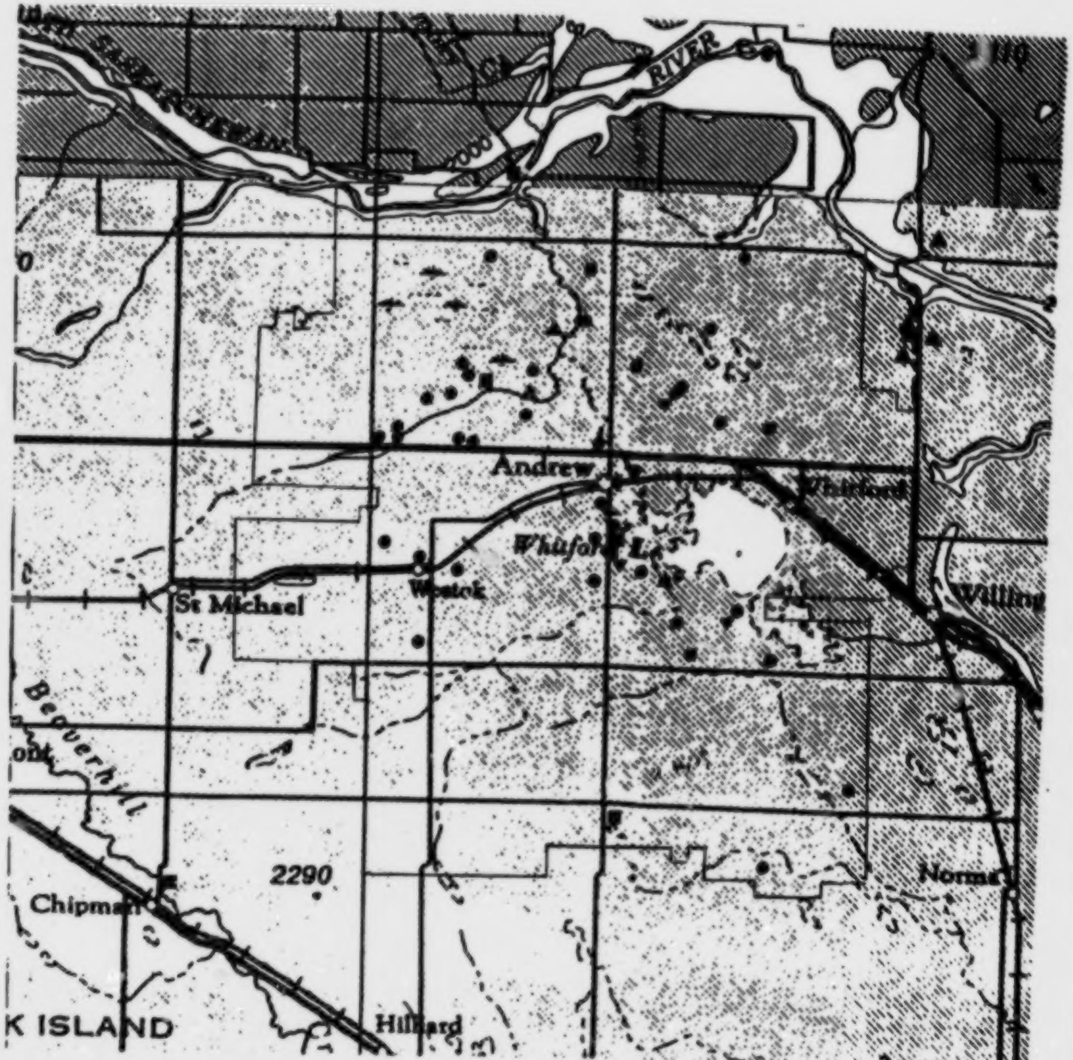
Recorded Incidents of Ukrainian

Temporary Shelters in the Andrew District

Legend

- ▼ Deep-Hole Type
- ▲ Slanted-Roof Type
- ■ Log-Wall Type
- ● Unknown
- —— Boundary of the Andrew District

(Source: Surveys and Maps. Department of Energy, Mines and Resources, 1978.)


SASKATCHEWAN
RIVER
Andrew
Whitford
Whitford L.
Wostok
St Michael
Willing
Norma
2290
Chipman
Beaverhill
K ISLAND
Hilliard

A certain number of dug-outs and other temporary shelters were built only for summer use.[7] The occupants specifically intended to complete a more permanent house before the snow fell. In other immigrant histories, the temporary shelters were built with the opposite intentions. They were to serve the family in cold weather, and were built specifically for the winter.[8]

Poverty and lack of manpower necessitated that many of these structures were occupied for several years. It has been reported that settlers in the Shandro area resided for an average of three years in their _burdei_.[9] Statistical information suggests that this area was not unique in this respect,[10] and many families dwelt in their dug-out shelters for seven years or more. In many of these cases, the family may have realized that they might not finish a second house in the first year. They would have likely built their _burdei_ as large and as solidly as they could.[11] In a few cases, the occupant remained at this stage of development for even longer.[12] In these latter cases, the dwellings transcend beyond the "temporary" classification, and could well be considered as permanent homes. They remain the subject matter of this study insofar as they were intended to be temporary dwellings, and their structure is consistent with those of actual temporary dwellings.

In the earlier years of Ukrainian settlement of east-central Alberta, temporary structures were built and occupied by the whole spectrum of immigrants, from the poorest[13] to the financially secure.[14] They were built for single men in some cases,[15] and for large extended families in others,[16] sometimes spanning three generations.[17] By the later years of the prime period, and after 1905, the people most likely to be occupying such structures were primarily only poorer people. This group included new settlers who had no money,[18] single men who spent much of their time away at work,[19] and newlyweds establishing their own homestead.[20]

B. Functions and Activities

The single most important function of the temporary dwellings was shelter from the cold. A protection from the rain and providing a secure sleeping area were also very fundamental functions, though some immigrants did live through the summer with no dwelling at all.[21] These spartan pioneers hid under trees from the rain, and slept on heaps of grasses and hay. Once the nights became frosty, building a shelter became imperative.

Spending a night in a dug-out shelter in Berisina, Saskatchewan, Rev. H.C. Schmieder commented on the structure:

> At first I was inclined to consider these houses well suited to the purpose and practical, because I felt that they would be cool in summer and comfortably warm in winter. But now I am convinced that they are actually damp and unhealthy and that they are just as difficult to heat as log houses since the frost penetrates so deeply into the ground.[22]

These temporary structures must have seemed very peculiar to the minister, in comparison to the dwellings of Philadelphia, where he was based. The dampness was confirmed by other informants, and dug-out structures were specially troublesome for those pioneers with rheumatism.[23] The structures must have required a constant and regular source of heat in the winter to combat the frost.

In spite of their defects, however, dug-out structures were quite effective in relation to the materials, time and manpower required to build them. Comparable investments to build a wooden structure above the ground would likely have resulted in an even more inferior abode. The mass of the earth itself in subterranean structures served to stabilize the temperature. The insulating capacity of the dug-outs is verified by their later uses as brooding houses, distilleries, and as ice houses.

Aside from the cold, rain posed an immediate problem for many immigrants. It debilitated the people and made them uncomfortable. It could also lead to more serious damage and illness. Even simple coverings of leafy branches offered a partial protection from lighter showers, though it was quite difficult to build a shelter that could withstand a sudden downpour. Sod roofs were especially infamous for absorbing water until mud and turf would begin to fall through to the floor.[24] Valuable clothing was hidden in trunks. Food and even infants were placed under tables so that lumps of sod might not fall directly onto them.[25] In some cases, the structures would flood literally to ankle depth.[26] The temporary shelters were then actually counterproductive, and in most cases were abandoned.[27]

A Ukrainian saying was offered by one informant in connection to rain "When it starts to rain in Winnipeg, it is already leaking in our house."[28] The humourous comment takes on a greater significance when compared with a similar exclamation relating to the context of the zemlianky of nineteenth century miners in Ukraine: "The rain is still beyond the hill, but in our zemlianka, it is already dripping" ("Shche doshch za horoiu, a v nas uzhe teche").[29] The parallel phrases from the two continents and two centuries point to a continuum of folklore dealing with these structures from nineteenth century Ukraine to twentieth century Canada.

Aside from the cold and the rain, mosquitoes posed one of the most immediate and frustrating problems of the settlers. Informants agreed that these irritating insects seemed much more troublesome at that time than they do today.[30] Temporary shelters did offer at least a partial refuge from mosquitoes, since only those within the limited space had to be dealt with. This was most important at night, when the settlers were trying to sleep. None of the temporary dwellings (or even permanent houses) of course, could be expected to be one hundred percent effective in this regard.

The settlers were familiar with the practice of building a smudge (okur) which helped keep the mosquitoes at bay. Metal pails (putni or peily) were filled with wood and grasses which were burned to produce smoke. The smudges would be tended so they would produce smoke continuously and drive off the pests.[31]

The larger fauna which populated the Canadian forests also caused concern for the settlers. The sounds of bears and coyotes near their shelter sometimes kept the women and children awake all night, crying in fear.[32] This was especially true if the husband had gone away for work, possibly for many months at a time. Bears would sometimes be attracted to the smells of the farmyard. They would come up to the structure itself to investigate any containers which appeared to contain cheese, milk, or other foods.[33] Several instances are recorded where a bear actually entered the structure.[34] In one case, a woman was startled by a small bear entering her shelter. In fear, she grasped for a shovel and clubbed the beast to death at the doorstep.[35] At least one zemlianka was built with an especially narrow door, specifically to prevent bears from entering.[36] Other structures were equipped with a large bolt on the door and a wooden lock also for that purpose.[37]

Smaller animals, especially snakes, lizards and frogs were also dreaded by most of the immigrants.

> . . . but a second problem arose. At night, snakes would crawl onto the top of the buda, and would warm themselves around the hole over the fire. They would stretch out their heads and occasionally some would fall into the fireplace, from where they would quickly wriggle to the side. Sometimes these fiends would crawl up on my head or under my arm while I was sleeping. This was not so terrible as far as I was concerned. My wife and children, meanwhile, were staying with . . . a farmer. Every few days, my wife sent the children to bring me food. The poor things had to walk eleven miles . . . Sometimes, they would not arrive until late, even though they had left early in the morning. They had to stay with me overnight. But at night, they could not sleep and did not allow me to sleep, fearing the snakes so much . . . .[38]

It can be expected that a great many settlers shared the sentiments of these children, rather than the indifference of this man. In other cases, snakes and frogs burrowed into the earth, near the dwelling. They were attracted to the warmth inside, or simply fell in accidentally.[39] Plastering the earthen surfaces with a hard layer of clay generally prevented these undesireable intrusions.[40] Skunks, gophers, and other rodents invaded the food supplies on occasion, and were also considered undesireable. They were deterred by whatever means which were at the disposal of the settlers.

Aside from the functions of sheltering and protecting the inhabitants, temporary dwellings also served to safeguard their possessions. Larger and less delicate objects, such as a plow, or a pail, for example, were generally stored outside, but kitchen utensils, clothing, and a hand mill, for example, had to be kept indoors.

In warm weather, most of the day was spent out of doors. The family entered the structure more often in the evening, when the mosquitoes were the most active, and at night, to sleep. Cooking was done outside whenever possible, as were most other activities. In the winter, much more time was spent within the structure itself. This was especially true if the family lacked warm clothing. Temporary dwellings had no bathroom facilities as a rule, and neither was a formal arrangement made out-of-doors. The settlers generally relieved themselves wherever it was private and convenient.[41]

Including such fundamental activities as eating and sleeping, the early pioneers necessarily spent a high percentage of their time simply sustaining their existence. Food preparation, for example, may have entailed gathering berries, hunting, trapping, fishing, and other activities. In many cases, certain individuals had to travel to the nearest store to purchase flour, sugar, and other supplies. This journey itself was often a major undertaking.

The maintenance and upgrading of the dwelling was also important. This included plastering the walls, repairing a rainsoaked hole in the roof, or possibly replacing a temporary door. Feeding and sheltering domestic animals, if such existed, was also a major chore. A barricade, for example, was constructed in some instances to fence in a cow. A supply of hay was necessary to feed stock over the winter.

Many activities of this period were geared to improve the lot of the settlers and establish their permanent homestead. One project which maintained a top priority for many families was the construction of a larger, more permanent house. A great number of trees had to be felled in this pursuit. The tasks of trimming, shaping, and fitting each log, assembling the walls, building a roof, and dealing with other vital features all took a great deal of time and effort. If several knowledgeable builders could work exclusively at this task, then a house could be built in a month or less.[42] If, on the other hand, an unskilled man and his wife did this work alone, then it usually took a whole summer[43] or more than one year.

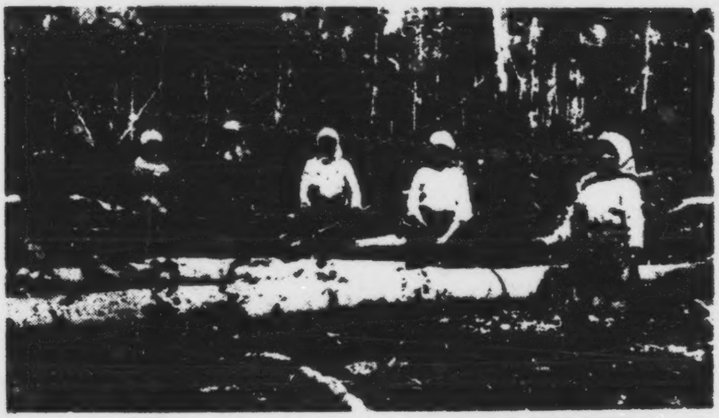


Figure 46: Ukrainian pioneer women cutting logs prior to house building. (Printed in William Czumer, Recollections About the Life of the First Ukrainian Settlers in Canada, Edmonton: Canadian Institute of Ukrainian Studies, 1981, p. 81.)

Some families considered land cultivation as a higher priority than building a house. A garden provided vegetables, a vital contribution to the food supply. This produce could furthermore be grown in great quantity for little or no cost. Many families depended almost exclusively on their gardens and wild game for food. Clearing a field for a grain crop was also very important since it could provide, after several months, a source of income which was desperately needed by many. The process of clearing the land, however, was often very difficult. Since the best land had been claimed before their arrival, and because of their own insistence on treed land, many of the Ukrainian homesteaders did not have much open prairie on their property. Planting a crop, then, required the strenuous labour of clearing bush. In many instances, trees were felled and roots were pulled with only the simplest of tools.

Construction of a house, cultivation of a given number of acres, and other improvements were necessary before the title for a claimed homestead was issued.

The process of establishing a more permanent farm was complicated greatly if some of the family members, usually the oldest male, had to leave the homestead to find work. This was, however, often necessary since so many immigrants arrived with little or no money. An immediate income was needed to buy food, implements, livestock, provisions, and sometimes even the ten dollars required to claim the land. Many men walked great distances to prospective jobs in mines, in railway gangs, or at farms of more established farmers. Harvest season remained a good period to find work for those who did not have a crop of their own to reap. At other times of the year, landing a job may have been more difficult. Women also were hired for more domestic labour on farms and in urban centers.

In practically all instances, the departure of the individuals for periods of a month, six months, or longer, significantly reduced the manpower at the homestead itself. The women and chidren were often left alone with a half sack of flour, to wait indefinitely for the husband's return. For many, the idea of being left alone in a tiny shack in this alien wilderness was extremely distressing. Many cried for the familiar streets of their village, surrounded by their old country neighbours. In any event, they had no alternative but to sustain themselves as best they could for the time being. They tended the various chores and very often prepared the wood for the house and other farm structures. The heaviest lifting sometimes waited for the husband's return.[44]

Strictly utilitarian activities were also complimented by more cultural and spiritual endeavors. Religious ceremonies and folk customs had played an important role in the lives of these people in Europe, and the organizing effect of these activities was sorely missed if not continued in Canada. Personal and familial customs were carried forward to Canada whenever possible. Icons were mounted on walls,[45] songs continued to be sung and dwellings (even temporary ones) were decorated with branches for Penticost,[46] as had been done in Ukraine. Larger community events took place wherever the people remained sufficiently intact in the new colonies. The lack of priests was strongly felt by many.[47] People travelled for many miles when a missionary came to visit the settlement, conducting services, baptizing children and performing other functions. Dug-out dwellings were used for the services on occasion.[48] The dwellings were cleaned and specially decorated for celebrations such as these.

Other, more secular celebrations also took place in these early years. Some immigrants had brought musical instruments with them from Europe,[49] and most retained their love of music, singing and dancing. Admittedly, these activities were minimized by the lack of time and space.

Reports of children being born in temporary dwellings are not uncommon.[50] In at least one case, a child was born even before the temporary shelter had been erected[51] and sometimes even en route to Canada.[52] Immediate medical exigencies and the long-term care of an infant were major problems in the given conditions.

C. Factors Affecting the Structure

Descriptions of temporary dwellings built by Ukrainian pioneers in Canada indicate a wide variety of forms. The actual structure in each case was affected by various factors. The builder adapted his construction to the circumstances in some respects, and the conditions themselves dictated the results in others.

One of the most important considerations that would affect the form of the dwelling was its intended permanence. Shelters built for only a few weeks or months were naturally built more simply and more quickly than those required throughout the winter and for several years. The builder of the structure could strive for either expendiency or quality in his construction, depending on how long he thought he would use it.[53] If he intended to use the structure only for a short time, then he would assemble it as quickly as possible. In this case, he would not, for example, take the time to debark the poles.[54] The removing of bark from the wood reduced the possibility of insect infestation and prolonged the life of the wood. This, however, became irrelevant if the structure was to be abandoned within a year or two. If the structure was to be evacuated before winter set in, it would not require the heavy insulation of a cold weather shelter. Summer shelters were generally quite shallow, or not dug-in at all. Their roofs, in some cases, contained only wood and other lighter materials.[55] Structures insulated for the winter were often excavated deeper into the earth and were covered with a heavier mound of sod and/or earth.

A second factor which had to be considered upon construction of the shelters was the intended number of occupants. As mentioned in the first Chapter, Russian armies of the nineteenth century planned 2.5 feet x 9 feet for each occupant (approximately two sq m). These structures were built, typically, for some sixteen soldiers.[56] In the context of Ukrainian immigration to Canada, of course, a formal standard did not exist, and the area for each occupant was much more arbitrary. The Herasym burdei housed approximately ten people and had an area of 30 sq m, offering as much as three square meters per inhabitant (even though many were young children).[57] Twelve members of the Svarich family, on the other hand, occupied a structure of an estimated twelve square meters, leaving them with only one square meter each.[58] The figure of two square meters per occupant is specifically inappropriate when considering single-occupant structures. The Dmyterko dug-out was quite small, though still it provided an estimated four square meters of room.[59]

The number of expected occupants did not always coincide with the number of people who actually slept in the structure. In some cases, part of the group may have departed soon to build their own shelter.[60] It was much more common, however, to house more occupants than originally planned. Settlers offered their homes, humble as they were, to other settlers who were passing through[61] or had arrived too late in the season to build their own abode.[62] In these cases, the interiors might have been lined from wall to wall with sleeping bodies at night, "packed together like pickled herrings."[63]

A third important factor which may have affected the size and solidity of the structure was the time available for construction. If the pioneer was in a great hurry, the structure was built without close regard for details. Falling snow, intolerable mosquitoes, a newborn baby, or an urgent need to depart for work may have contributed to a settler's haste. Warm weather, on the other hand, or shelter with a neighbour, may have allowed a builder the luxury of fitting his logs carefully, and assembling a warm and sturdy structure.

The skill and experience of the builder also affected the construction of his burdei. It has been demonstrated that zemlianky of various types were relatively widespread on the territory of the Ukraine in the nineteenth century. The majority of immigrants were likely familiar with, or had at least seen such a structure.[64] It does not follow, however, that most peasants would have necessarily known how to build one. The scarcity and price of building materials in Bukovyna and Galicia facilitated the evolution of specialized builders, who would often be hired by the rest of the population to construct houses and other buildings. When these "carpenters" found themselves in the Canadian prairies, they could build themselves a shelter quite quickly and easily in comparison with those who were less familiar with the fundamental skills of woodworking.[65] Non-specialists were likely much slower at constructing a shelter, and the details of construction may have been awkward and much less refined. In certain cases, his Canadian shelter was the first structure the peasant had ever erected in his life.[66] At this point, however, he had no choice but to try as best as he could. In other cases, an immigrant was fortunate enough to have a neighbour who could help.

> The time came to build a house as winter was approaching. But how does one build a house? Nykola Genik stood as in good stead. He hailed from the Carpathian mountains and knew how to build shacks.[67]

The above quotation suggests that regional differences in Western Ukrainian lands may have also affected the familiarity with different forms of architecture. The Carpathian mountains to the south and west of Galicia and Bukovyna were more densely forested. The Carpathian economy was based more on lumbering and livestock, pursuits which frequently necessitated the use of temporary dwellings.

As discussed earlier, a difference in use of terminology has been identified between Bukovynian and Galician sources. The incidence of structural types, however, does not appear to vary between sources from the two regions. Table 13 illustrates that the relative occurence of each type is consistent.

Table 12: Incidence: Structural Types Identified in Fieldwork

	Primitive	Deep-Hole	Slanted-Roof	Log-Wall	Unknown	Total[68]
Bukovynian	0	7%(3)	27%(12)	11%(5)	56%(25)	100%(45)
Galician	0	5%(1)	27%(6)	14%(3)	55%(12)	100%(22)

The sample of data collected has failed to show any other significant structural variance between Galician and Bukovynian dug-out shelters.

Having dealt with certain factors that affected the structure of the temporary shelters, it is also important to note the effects of the availability of manpower, tools and materials. The importance of sufficient manpower in constructing a shelter is obvious. To lift a large beam above one's head was much easier if two or more strong individuals could help. Considering the many difficulties of the immediate post-immigration period, many settlers united into groups larger than the nuclear family.[69] With the combined efforts of several adult males, a larger and stronger structure could be constructed more quickly. This would shelter the entire group over the immediate period, and the various smaller groups could set out on their own as their resources permitted.[70] Men were traditionally responsible for most of the construction work, though women and children helped wherever there was a shortage of manpower. In some cases, when the man was unable or absent, the women and children took over the main responsibilities of the task.[71]

Some of the prospective immigrants foresaw their position in the developing territories of Canada and packed a number of very valuable tools with them. A spade, saw, axe, scythe, wood auger and hammer became extremely valuable when the burdei were being built. In some cases, the immigrants even packed panes of glass, window frames and hinges from their houses in Europe.[72] Other imported articles included nails,[73] woven blankets (verety),[74] metal stove tops,[75] or the entire stove itself (shparhat).[76] If the pioneers lacked some or all of these tools and articles, the task of building a shelter became more difficult. Certain primitive structures were built with no tools at all,[77] though the majority of pioneers managed to borrow[78] or buy[79] at least a spade and an axe.

The majority of materials for construction were local and natural. Poplar, clay, sod and grasses were the most important building materials, and these were all available in great quantity over most of the pertinent area. Spruce, willow, moss, slough grasses, and special types of clay were used when available and desired. Aside from those articles brought from Europe, the rest were acquired in Edmonton or in some rural store in Alberta. Windows, hinges, chimney pipes and boards were generally acquired in this way. Many settlers, however, did not acquire these specialized materials at all, and constructed their dwellings without them. Hinges, windows, doors and stoves could be improvized and substituted with whatever materials were on hand.

Still other factors affected the construction of temporary dwellings. Certain structures, especially those with deep excavations, required a stiff clay base, otherwise the walls and floor would crumble and slide.[80] Sandy soil, on the other hand, was easier to dig into, but acquired some solid reinforcement to keep it from slumping in.[81]

Uneven, hilly terrain may not have been most desireable in terms of farming the land, though it did offer certain advantages for constructing temporary shelters. Excavations were more easily made into a hillside, and such structures were afforded better drainage. The incline of the hill necessitated significant structural adaptations, and sometimes affected the structural type itself. Two-plane roofs were built more frequently on level soil, and in shallow inclines, whereas a single-planed roof was used more commonly in a steeper hillside. This tendency is attested in Ukraine[82] as well as in Alberta.[83]

D. Range of Structural Forms

A great degree of variation existed in the temporary dwellings of Ukrainian immigrants since each case was affected by a number of factors. The most primitive arrangements offered practically no shelter at all. The most elaborate _burdei_, on the other hand, were almost as substantial as a permanent house. Temporary dwellings in most cases ranged between these extremes.

A system of classification is valuable for purposes of analysis, combining and isolating structures with similar and contrasting features. A typology based on prominent structural features has been developed from the descriptions. It must be remembered, however, that the categories are established from a spectrum of possibilities, and as such, the boundaries are sometimes arbitrary.

1. Primitive Type

The primitive type of temporary structure includes those most transient arrangements made by the newly arrived settlers for protection from insects, the wind and the cold. In most instances, these structures consisted of little more than a sleeping area. Primitive type dwellings could be built in a matter of minutes or hours.

At the lower end of the spectrum, the primitive structures cannot be separated clearly from actually sleeping in the open. When the pioneers did sleep under the stars, they collected a pile of hay and grass to form a soft area, upon which each person would lie. When this "bed" was located behind a rise in the earth, a hill of dirt, or a fallen log, it would be sheltered at least partially from the wind. Extended further, a shallow pit was purposely hollowed out. This formed the basis of a primitive shelter.

In other cases, especially on rainy nights, the people may have huddled under the branches of a tree. Rain landing on the leaves and branches would not penetrate to the ground as readily. The more branches overhead, the greater the protection. A second type of primitive shelter was simply an elaboration of this principle. Additional sticks and branches were piled or suspended around a tree to increase the effectiveness of the covering. Once the air flow was restricted by a thick mass of foliage, the body heat of the inhabitants was at least partially retained. The shape of these structures, especially when constructed around an artificial center pole, suggested a tent or an Indian wigwam (*iak indiianske shatro*).[84]

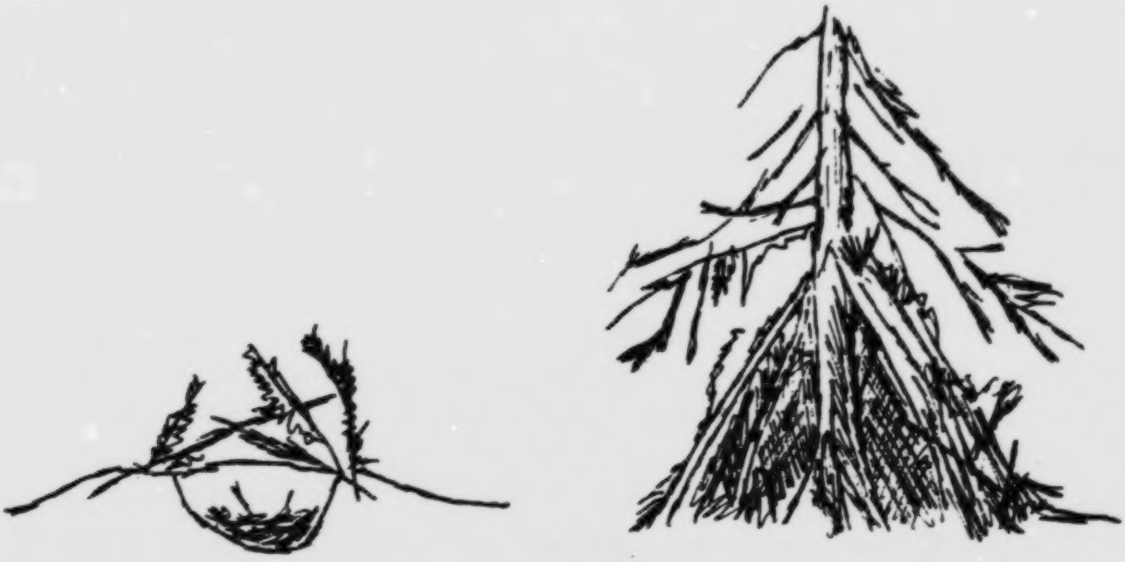


Figure 47: Concept drawings of two variants of primitive dwellings, built by Ukrainian pioneers in Alberta.

Other conical dwelling structures included the round zemlianka of the 19th century east European armies, as well as the kolyby of Carpathian loggers and fishermen. These more substantial variants are described in Chapter I.

The Lackey and Lackey 2 cases form the basis for the description of the first earthen-type primitive structure[85] and the Bulavka description serves to identify the second, conical shaped structure.[86] An open fire in the middle of the interior seems characteristic of this type of structure as opposed to the more elaborate types. Because of this and other factors, several other case descriptions may also fit in this category though the evidence is inconclusive.[87]

In spite of the lack of documentation, various facts suggest that primitive type shelters were relatively common, especially in the earliest years of immigration.[88] At that time, few alternatives existed. Families of settlers who had been transported to their homesteads immediately upon arrival were simply left to their own devices. The most primitive covering was necessary at least for the first several days or a week while the "real" temporary shelter was being built. Most informants hardly considered the first a shelter at all. This is more likely insofar as these "structures" probably changed form from day to day when leaves wilted, branches sagged or got knocked over, and new ones were added on. A set structural description would be impossible. For the same reasons, such transient and light shelters are also ignored in scholarly literature.

2. Deep-Hole Type

As the name suggests, the principal feature of this type of structure was a deep excavation. These structures were almost completely subterranean; the roof often consisted of a row of logs laid on the ground to cover the hole. A second type of roof found within this category was built with the roof poles bent upwards in the center to form an arch. The Nimchuk case, though classified as a deep-hole type, was similar to a primitive type structure.[89] The differentiation point between the two categories is the factor of depth. If the dug-out interior was tall enough to stand in, it has been considered a deep-hole structure. If not, then it was labelled a primitive shelter.

The Rusnak burdei, built in Bukovyna, serves as a clear precedent of a deep-hole structure covered with an arched roof, (described in Chapter I).[90] This arching roof may be considered a transitional feature linking the deep-hole type with other dug-out types.

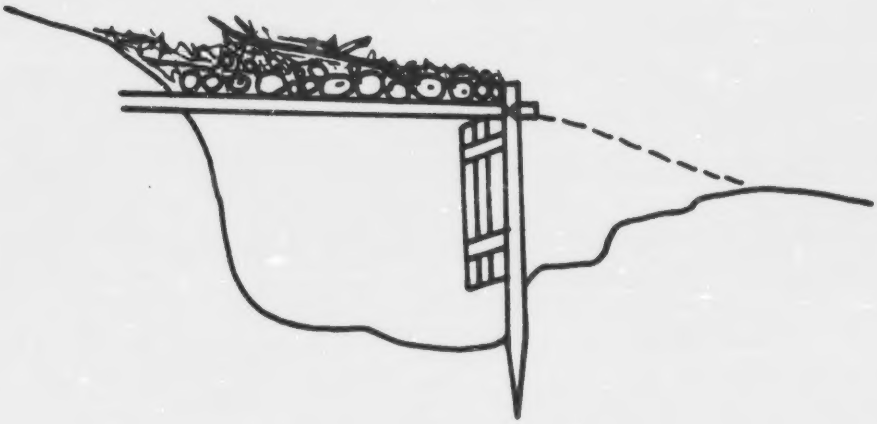


Figure 48: Concept drawing of a deep-hole dug-out built into a hillside. Cross-section.

Deep-hole structures were relatively easy to construct and required comparatively little labour. The excavation itself was a larger task than for shallow structures, but once this was completed, the dwelling could be occupied almost immediately. When the roof was built quickly of logs covered with sticks and foliage, however, it was generally a poor rain cover.[91] A roof covered further with sod and earth, especially if it was arched, required more time and effort to complete. This investment of labour, however, improved the quality of the shelter considerably.[92]

The depth of the hole in this type of structure left it very susceptible to water seepage and other related problems. It was essential that the water table was low in that area. A strong clay base was also an important geological consideration. It was critical that the tall earthen walls would not slump, and if the soil was not ideal, the walls had to be well reinforced.[93]

In most examples, the deep-hole structures occurred in the same contexts as primitive shelters. They often served as very temporary refuges while the occupants made arrangements for other temporary or more permanent dwellings.[94] In one recorded case, however, this type of structure was solidly built and occupied for four years.[95] The residents, a father and four daughters, were destitute. Since the father, Mr. Huculak, was skilled at carpentry, the walls and roof were well reinforced. The door to the dug-out was made of two carved boards and a glass window. It contained a stove with a metal top, a bed (lushko), a hand mill (zhorna) and other furnishings.

Precedents for deep-hole structures are found in various cultures throughout the world, as dealt with in Chapter I. Similar structures are described in Ukrainian folk architecture, specifically in variants of the kurin[96] and in certain burdei from Bukovyna.[97] Five cases recorded in Alberta seem to fall into this category, though most of these descriptions are quite fragmentary and incomplete.

3. Slanted-Roof Type

A third type of structure found in temporary dwellings of Ukrainian pioneers was built with a slanted roof of two planes. These two sloping sides of the roof rested upon a large central beam (or beams) which had been suspended over the interior space. The central beam rested upon posts secured into the earth. The posts themselves could have been arranged variously, though most commonly, one vertical pole supported each end of the beam. This type of structure was occasionally built without an excavation,[98] though it was most commonly constructed over a hole in the earth.

Slanted-roof structures are identified in many contexts in Ukraine, from the early Trypilian zemlianky to the twentieth century.[99] This type of structure is mentioned very frequently in

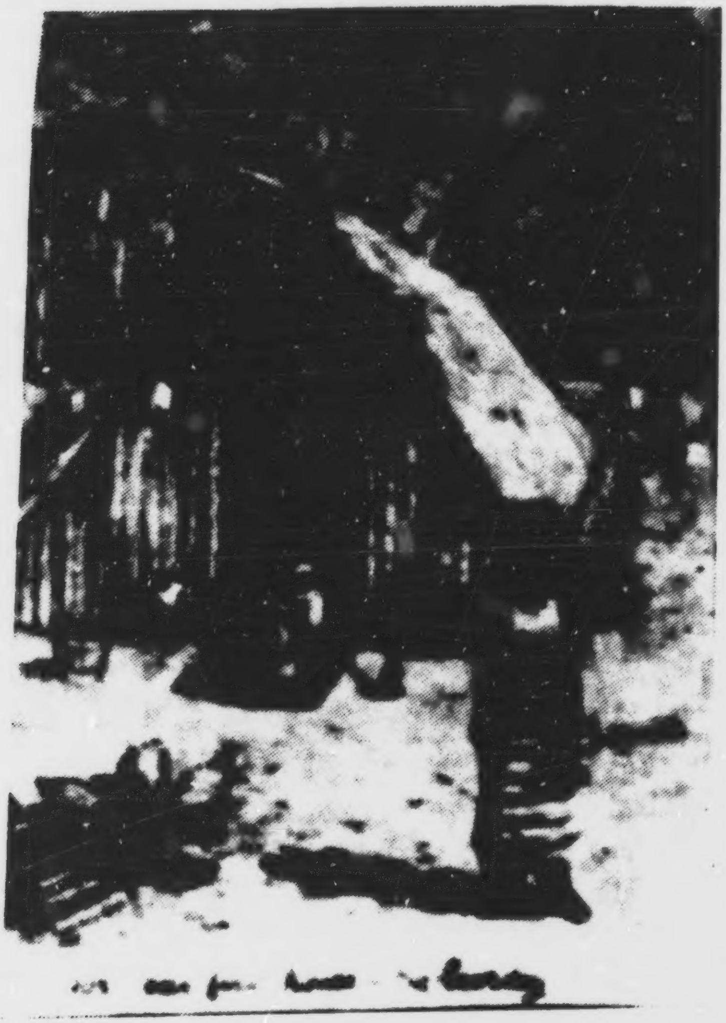


Figure 49: Kurelek 3. This slanted-roof structure is relatively elaborate, featuring six small window panes above the door. (Detail of a painting by William Kurelek, reproduced in Marguerite Burke, The Ukrainian Canadians, Scarborough: Nelson Canada, 1982, p. 43.)

scholarly literature dealing with zemlianky of the nineteenth century.

> In the zemlianky (burdei, burdii, burdeli) - dwellings of the poorer population of central and southern regions of Podillia - there was no ceiling...The most common type of roof structure was the "roof-on-forked posts" (dakh na sokhakh). It was built in the following manner: Wooden posts (sokhy, slupy) were dug into the ground at the center of the short walls of the structure [i.e. at each end of the major axis. A.N.]. A horizontal beam (balka, prohon) was suspended onto these posts across the length of the zemlianka. Rails (patyky, driuchky, zherdyny) or split wood (kolote derevo) were spread upon this beam. These in turn, were covered with a layer of earth or overlaid with sod.[100]

The slanted-roof dwelling is most frequently designated in descriptions of temporary shelters in Alberta. A significant degree of variation in size and form has been found.

This type of structure was built in a variety of contexts. Simple forms were built quickly in cases where they were to be used for only a short period of time. In contrast, other variants of slanted-roof dwellings were large and built very sturdily. These were often occupied through the winter and sometimes for a number of years. A detailed description of the structural features of slanted-roof structures is found in Chapter V.

4. Log-Wall Type

The fourth major type of temporary dwelling was built with vertical walls made of horizontal logs. A foundation of four logs was placed around the perimeter of the intended structure, overlapping at the corners and notched at these intersections. Additional rows of logs were stacked over this base one at a time, also notched at the corners to fit snugly over each other. Log walls constructed in this way were called a zrub.[101] The respective rows of logs were sometimes further reinforced with wooden dowels (tybli), especially near the door and windows, where the logs were sawn short.[102]

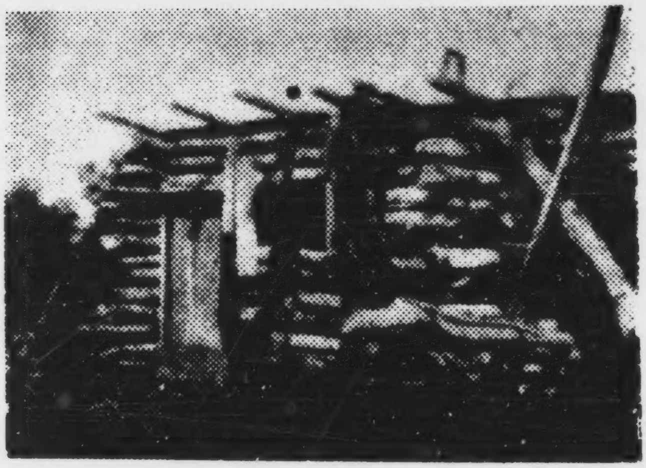


Figure 50: Krawchuk zemlianka. The photograph shows a log-wall structure with a shed roof. (Printed in Petro Krawchuk, Vazhki roky, Toronto: Kobzar, 1968, p. 35.)

The two major variants of this type of structure were those with a flat roof[103] and those with a gabled roof,[104] Each of these two categories can be further subdivided into dug-outs,[105] and those built above the ground.[106]

The nearly flat roofed burdei in Volodymyr Shukhevych's description stands as a precedent for this type of structure in the Hutsul region of Ukraine, adjacent to Galicia and Bukovyna. Sloping roofs, however, predominated even in the oldest and poorest dwellings of Western Ukrainian territories.[107] In Alberta also, the flat roof covering was considered substandard in many cases. It was only a temporary solution built in times of haste, and was replaced by a gable roof as soon as the latter could be constructed.[108]

Gable roofs were sometimes covered with sod, though more often with a thatch of grass or reeds. This was left usually until the first harvest of rye was gathered, after which a better thatch of straw was put on.[109] Shingles were applied when they were available.[110]

Gable-roofed, above-ground dwellings shared these two features with permanent houses (khaty). The differentiation between permanent homes and temporary dwellings was sometimes quite arbitrary. The critical characteristic was the perspective of the occupants in some cases. If they considered the structure substandard and intended to build another one as soon as possible, then it was temporary. If, on the other hand, they settled in and shifted their priorities to farm work and other activities, then the structure was considered permanent.[111]

The Parferi Tkachuk burdei illustrates the transition point from the slanted-roof type to the log-wall type of structure.[112] A large hole was excavated into the earth as if for a slanted-roof structure. At that point, however, a wooden wall (zrub) of approximately 60-70 cm was erected around the perimeter of the pit and a roof of beams (ligary) and rafters (krokvy) was built over the zrub. This type of structure is called a napivzemlianka in Ukrainian folk architectural studies, where it is relatively common. T. Kosmina describes two different types of roof structures which were built on napivzemlianky in Podillia in the nineteenth century.

> Napivzemlianky, whose walls rise some 50 cm above ground level, permit two types of roof constructions. The older roofs, with no ceiling, were built "on forked posts" (na sokhakh), while the newer roofs were built "on rafters" (na krokvakh), and had a ceiling.[113]

The reference to krokvy in the P. Tkachuk description suggests that it was a napivzemlianka with a roof built "on rafters" (na krokvakh).

The more complex construction of the log-wall type of dwellings suggest that they were built by those immigrants with more time and more manpower. A log-wall shelter was often a second structure constructed by the immigrants. They may have spent their first few weeks in a primitive shelter while they were building a log dwelling. Even in these cases, the log-wall structure was sometimes considered temporary. A third structure, larger, above ground, and more permanent, was often built within a few years.[114] In several instances, a newlywed couple settled onto their own farm, where they built or acquired a small, sometimes dug-out home.[115] Insofar as these dwellings were considered temporary, and insofar as they were called a burdei or a buda, they remain a form of dwelling inferior to a permanent house (khata).

E. The Principal Type

Slanted-roof dug-outs stand out as the most frequent type of temporary dwelling built by Ukrainian pioneers in east-central Alberta. They represent 56% (31 cases) of the sample, as compared to 29% (16 cases) log-wall type, 9% (5 cases) of deep-hole dwellings and 5% (3 cases) of primitive type structures.[116] Slanted-roof structures are also the most common type described in literature on folk architecture of the Ukraine.

Descriptions of pre-lumber dwellings of prairie immigrants in general, however, do not frequently mention such structures. Only one description of a similar structure has been found in relation to "English" settlers. This is in the quoted passage describing Lawrence, Kansas in 1854.[117] These "hay tents" were included in that author's description specifically because of their "grotesque" form in his eyes.

This frequency of incidence with Ukrainian immigrants as opposed to the general population suggests that the slanted-roof type of construction was, indeed, distinctly Ukrainian or at least East European. Several sources pointed to similar construction preferences in relation to Rumanian pioneers in Alberta,[118] Poles and Germans from settlements in Eastern Europe.[119]

Primitive and deep-hole structures were less defined and relatively incidental in character. Log-wall shelters, on the other hand, approached permanent dwellings in form. The slanted-roof type remains as the most unique and best defined structural type of temporary dwelling used by Ukrainian pioneers in Alberta. As such, it has received the most extensive attention in this study, and is often referred to as the "Principal" type.

F. Later Uses

The great majority of temporary shelters used by Ukrainian pioneers in Alberta were built and occupied from ninety to seventy years ago. Various fates have befallen these shelters since that time. Very little physical evidence can be expected to have survived the last seven decades.

In some cases, the temporary shelters were abandoned relatively intact. This occured most frequently when the family or settler moved completely off that land[120] or at least to another site on that same homestead.[121] If no other settlers arrived to disturb the structure, it would deteriorate by natural causes. The structures by definition were temporary and fell apart relatively soon without maintenance. The length of time necessary for the wind, rain, decomposition, and other factors to break down the structure varied according to its type, the materials, and the soundness of construction. Most frequently, however, the structures were later found by other people who dealt with them as suited their needs. On certain occasions, the structure was restored and re-inhabited,[122] though more often it was destroyed. In one instance, the remains of a structure were discovered as a farmer was plowing a field in 1926. This "hole" was located in the middle of the new field, so the farmer plowed it in to keep the cropland intact.[123] In another instance, a family moved into a farm in 1929 and the children discovered a large hole in the woods north of the yard. They enjoyed playing in the hole, accelerating the process of degeneration.[124]

In contrast to the above cases, the pioneers very often stayed on their land and built more permanent dwellings in the immediate vicinity of their original shelter. The farmyard, then, developed around the temporary structure. In the years immediately after the original occupation, it was used again in certain cases by later immigrants or hired workers for shorter periods of time.[125] Only more substantial structures, such as the log-wall type or possibly a slanted-roof structure, were likely to be reoccupied in this way. In at least one instance, older family members remained in the dug-out structure after the younger generations had moved into their new house.[126] The first shelter in this case was quite substantial, warm, and dry. The informant's grandmother appreciated the privacy of the seperate structure. It was quiet and she could pace her day according to her own

Table 13: Primitive Type

Later Uses

	other occupants	children play area	chicken coop	pig shelter	ice house	root cellar	garbage dump	granary foundation	well	remnants extant	flooded	abandoned	occupant destroys	later destroyed	destr. individually	destr. with farmstead	plowed over
Bulavka													?				
Lackey												p					
Lackey, 2												p					

Table 14: Deep-Hole Type

Later Uses

	other occupants	children play area	chicken coop	pig shelter	ice house	root cellar	garbage dump	granary foundation	well	remnants extant	flooded	abandoned	occupant destroys	later destroyed	destr. individually	destr. with farmstead	plowed over
Huculak																	
Kitz					p				p								
Nimchuk												p					
Tkachuk, M.											x		x		x		
Tokaruk					?	?											x

Table 15: Slanted-Roof Type

Later Uses

	other occupants	children play area	chicken coop	pig shelter	ice house	root cellar	garbage dump	granary foundation	well	remnants extant	flooded	abandoned	occupant destroys	later destroyed	destr. individually	destr. with farmstead	plowed over
Archiniuk																	x
Bar-V-nok																	
Berisina(?S)																	
Bordian												x					x
C.A.																	
Chmilar																	
Dmyterko				x								x		x		x	x
Educ. Report																	
Eurchuk (S)																	
Harasewich																	
Hawreliak																	
Hilkow											x						
Jubilee book																	
Kurelek, 1						x											
Kurelek, 2						x											
Kurelek, 3																	
Lazhovsky		x										x	x				
Lepatsky																	
Malayko																	
Natchuk			x										x				x
Osinchuk																	
Ruptash																	x
Sachkiw			x														
Shandro, N.																	
Shandro, S.																	
Shemko																	
Socholotoski			x														
Svarich													p				
Svarich, 2																	
Zabrick																	
Zazula											x		x	x		x	

Table 16: Log-Wall Type

Later Uses

	other occupants	children play area	chicken coop	pig shelter	ice house	root cellar	garbage dump	granary foundation	well	remnants extant	flooded	abandoned	occupant destroys	later destroyed	destr. individually	destr. with farmstead	plowed over
Basaraba											x	x					x
Bodnarek																	
Danelesko																	
Danelesko 2																	
Halitsky																	
Herasym										?							
Hushulak											x						
Iwaschuk			x										x				
Krawchuk																	
Kurylo																	
Sawchyn (S)												x					
Serna					x									x	x		
Shipko		p	x														
Swyschuk												p		x	x		
Tkachuk, P.																	
Yushko			x							x							

strength rather than to the busy life in the main house. Several dsescriptions indicate that these small shelters were used as play areas for children growing up on the farm.[127]

Other later uses for the vacated structures included storage. If the roof remained intact, it could shelter a variety of items from the wind and rain. If the structure was dug very deeply into the ground and could offer good insulation, it was sometimes used as an ice-house.[128] In this case, if there had been a window in the structure, it was curtained or otherwise covered to keep the interior cold and dark.[129] A solid door was necessary and the entire structure was insulated as well as possible to retain the chilled air in summer. A block of ice was hauled into the dug-out in late winter, and insulated with sawdust.[130] The dug-out dwellings then became very similar in function to those ice-houses built specifically for this purpose.[131]

Another later use of temporary dwellings involved their conversion into chicken coops and brooding houses (kurnyky).[132] In most instances, this changeover required little alteration other than constructing a framework of poles for roosts. One family installed a larger window into the structure when they converted it to a chicken coop.[133] Chickens did not normally lay eggs during the cold winter, though it was warm enough in some dug-out coops to provide those farmers with fresh eggs all year.[134] A roosting frame in the Yushko dug-out suggests that this structure was used at some time to house pigeons.

The Dmyterko dug-out, after it had started caving in, was used to house another species of domestic animal. A sow and her piglets were kept in the structure for a short period of time.[135]

If the structure was located in an appropriate and unobtrusive spot, it sometimes was used as a garbage dump.[136] In one case, the relatively deep hole was used to bury a dead horse, several dogs, and other animals.[137]

Many temporary shelters, however, were never again used. Some of the structures had started to disintegrate before the settlers had even vacated them. Several recorded instances describe a dug-out being flooded with the melting of snow or in a rainy season.[138] In other

Figure 51: Kurelek 1. The burdei is located at the edge of the developing farmyard. It is now used for storage. This slanted-roof structure is apparently built with a saw-horse type frame. (Detail of a painting by William Kurelek in The Ukrainian Pioneers, Toronto: Niagara Falls Art Gallery, 1980, p. 47.)

Figure 52: Site of the Tokaruk dug-out, south of Andrew. The structure had been located in the area at the center of the illustration on the gradually inclining hillside. The entire area is under cultivation. (Photograph taken in 1983 by Andriy Nahachewsky.)

Figure 53: Pawliuk site, near Royal Park, prior to excavation. Note the depression in the center of the photograph and the pails protruding from the hole. (Photograph taken in 1983 by Demjan Hohol.)

cases a cow[139] or a horse[140] wandered onto the roof while grazing on the grasses and other vegetation which had grown there. The weight of the animal collapsed the structure, and it had to be rebuilt[141] or, more likely, abandoned.

Many temporary dwellings were disassembled shortly after they had been abandoned. The farmer may have required the building materials. The structure may alternately have been removed for more cosmetic reasons. The family did not consider the earthen mound attractive, and did not want to retain a structure which reflected their recent poverty and hardship. Some structures interfered with the newer farm activities and were demolished for that reason. In one case, the remaining hole was later filled in with concrete and used as the foundation for a granary.[142]

Structures reused as root cellars or chicken coops in the 1920s and 1930s were very often abandoned again when they became unsturdy. A new chicken coop was often built, for example, which required less maintenance than the first. The old dwelling structures stood empty again, continuing to deteriorate. They were usually torn down at this time.[143]

The process of rural depopulation accompanied by mechanization resulted in the abandonment of many earlier farmyards, especially in the second half of this century. The younger farmer often seeded his crops around the farmyard with its old buildings and trees. Large earth moving machinery, however, could easily level a part or all of the farmstead, opening additional land for crops. Those dwellings which survived the first generation of farmers were often destroyed by the second or third.[144]

Three large dug-out structures constructed adjacent to each other on a hillside had remained relatively intact until 1980. A gas company was constructing a pipeline through the area and a bulldozer fell into one of the excavations. The company determined that all three sites should be levelled as a safety precaution.[145]

ENDNOTES

Chapter III

Temporary Dwellings

A. Incidence

1. Czumer Recollections, p. 14. Czumer prints a translation of a personal interview with Ivan Pillipiw.

2. Personal Interview with Mr. Nick Cebuliak, describing the Dmyterko dug-out, Andriy Nahachewsky, July 28, 1983. Some aspects of this story are confirmed by Dmyterko's neighbours and by six photographs taken by Mr. Cebuliak in 1962.

3. Personal Interview with Mr. Paul Sembaliuk, discussing the Russo-Orthodox monks' dug-outs, Andriy Nahachewsky, June 15, 1983. This description was confirmed by inquiries at the Smoky Lake Municipal Office, and with an unnamed local farmer near the monks' property. Figure 45 is a photograph taken at the site.

4. Personal Interview with Peter and Elsie Rybak, discussing the Basilian Fathers' dug-out, Demjan Hohol, June 8, 1983.

5. Personal Interview with Lillian and George Semeniuk, Andriy Nahachewsky, July 28, 1983.

6. Ibid.

7. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich buda, Andriy Nahachewsky, August 2, 1983.
Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky buda, Andriy Nahachewsky, September 7, 1983.

8. Telephone Interview with Mr. Nick Zukiwski, describing the Shemko structure, Andriy Nahachewsky, August 3, 1983.

9. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

10. See Tables 1-5.

11. Personal Interview with Mr. John Archiniuk, Demjan Hohol, June 7, 1983.

12. See the discussion of the Dmyterko case above.
Also, Recorded Interview with Mrs. Ramona Walker, describing the Swyschuk dug-out, Andriy Nahachewsky, July 16, 1983. Both these men lived in their respective dug-outs for over 30 years.

13. I.A. P. "Teper i kolys," recollections of Hryts Bulavka, pp. 472-473.

14. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich buda, Andriy Nahachewsky, August 2, 1983.

15. "Devnezee (Dan) and Maria Humeny" biography, Dreams and Destinies, p. 378.

16. Personal Interview with Mrs. Anna Zazula, describing the Stefan Shandro burdei, Andriy Nahachewsky, September 7, 1983.

17. Sid Farus "Farus, Maxim" biography, Dreams and Destinies, p. 330.

18. Recorded Interview with Mrs. Kay Grakul, discussing the Lepatsky burdei, Andriy Nahachewsky, July 3, 1983.

19. Personal Interview with Mrs. Mary Boyko, describing the Shipko structure, Andriy Nahachewsky, June 14, 1983.

20. Recorded Interview with Mrs. Verna Znak, describing the Iwashuk structure, Andriy Nahachewsky, June 9, 1983.

B. Functions and Activities

21. Mykhailo Stashyn, "Moi spohady," [n.d.] as cited in Marunchak, The Ukrainian Canadians, pp. 76-77 (Man.). "Hushulak Wasyl" biography, Dreams and Destinies, p. 384.

22. Rev. H.C. Schmieder, an article in Kirchenblatt (Reading, Penn.: 1889), translated by Dr. John Schmieder, excerpted in D'Arcy Hande, "Pioneer Housing," The Western Producer, Oct. 7, 1976.

23. Recorded Interview with Mrs. Verna Znak, describing the Iwashuk structure, Andriy Nahachewsky, June 15, 1983.

24. Ibid.

25. Ibid.

26. Personal Interview with Mrs. Verna Topolnisky describing a relative's experience, Andriy Nahachewsky, August 4, 1983.

27. Not, however, in the case cited.

28. Recorded Interview with Mrs. Verna Znak, describing the Iwaschuk structure, Andriy Nahachewsky, June 15, 1983.

29. Prykhodko, "Do pytannia," p. 53.

30. Personal Interview with Mrs. Hafia Janishevski, discussing the Svarich dug-out, Andriy Nahachewsky, August 2, 1983.

31 Ibid.

32. Personal Interview with Mrs. Josephine Sachkiw, describing the Myshliak story, Andriy Nahachewsky, June 14, 1983.

33. Personal Interview with Mrs. Daria Woitkiw, describing the Osinchuk dug-out, Andriy Nahachewsky, June 14, 1983.

34. Personal Interview with Mrs. Josephine Sachkiw, describing the Myshliak structure, Andriy Nahachewsky, June 14, 1983.

35. Personal Interview with Mrs. Anna Zazula, describing the Nikon Shandro burdei and her mother's experience, Andriy Nahachewsky, September 7, 1983.

36. Personal Interview with Mrs. Mary Boyko, describing the Shipko zemlianka, Andriy Nahachewsky, June 14, 1983.

37. Personal Interview with Mrs. Daria Woitkiw, describing the Osinchuk dug-out, Andriy Nahachewsky, June 14, 1983.

38. Mykytiuk, "Nashi pochatky," the recollections of Vasyl Sydor, p, 475.

39. Telephone Interview with Mr. Nick Zukiwski, describing the Shemko dug-out, Andriy Nahachewsky, August 3, 1983.

40. Ibid.

41. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

42. John Zurawell, Love and Sorrow, (Edmonton: author, n.d.), p. 62.

43. Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky family history, Andriy Nahachewsky, September 7, 1983.

44. Marunchak, The Ukrainian Canadians, p. 83.

45. Personal Interview with Mrs. Mary Boyko, describing the Shipko structure, Andriy Nahachewsky, June 14, 1983.

46. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich buda, Andriy Nahachewsky, August 2, 1983.

47. Czumer, Recollections, pp. 49-54.

48. Personal Interview with Mrs. Anna Zazula, describing the S. Shandro dug-out, Andriy Nahachewsky, September 7, 1983; and Schmieder, Kirchenblatt, (Sask.).

49. "Maga, John and Angeline" biography, Dreams and Destinies, p. 443.

50. Telephone Interview with Mr. Nick Zukiwski, describing the Shemko dug-out, Andriy Nahachewsky, August 3, 1983.
Maria Derenowsky, "Lichuk, Peter and Rose" biography, Dreams and Destinies, p. 433.

51. Personal Interview with Mrs. Anna Zazula, describing the Shandro story, Andriy Nahachewsky, August 1, 1983.

52. Telephone Interview with Mr. Alex Tkachuk, describing the M. Tkachuk iama, Andriy Nahachewsky, July 26, 1983.

C. Factors Affecting the Structure

53. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich dug-out, Andriy Nahachewsky, August 2, 1983.

54. See Chapter V A.

55. Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky buda, Andriy Nahachewsky, September 7, 1983.

56. Entsiklopedicheskii slovar, s.v. "Zemlianka."

57. Personal Interview with Mr. William Herasym, Demjan Hohol, June 16, 1983.

58. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich shelter, Andriy Nahachewsky, August 2, 1983.

59. Personal Interview with Mr. Nick Cebuliak, describing the Dmyterko dug-out, Andriy Nahachewsky, July 28, 1983.

60. Personal Interview with Mrs. Anna Zazula, describing the S. Shandro burdei, Andriy Nahachewsky, September 7, 1983.

61. Ibid.

62. Kay, Early Ukrainian Settlements, p. 139.

63. Personal Interview with Mrs. Anna Zazula, describing the N. Shandro burdei, Andriy Nahachewsky, August 1, 1983.

64. Personal Interview with Mr. Mike Rusnak, Andriy Nahachewsky, June 16, 1983.

65. Personal Interview with Mr. Nick Kupchenko, discussing Mr. Mykhailo Basaraba, Demjan Hohol, June 8, 1983.

66. Mykhailo Stetsko recollections in Czumer, Recollections, pp. 32-33.

67. Kay, Early Ukrainian Settlements, p. 139.

68. These figures represent the total number of cases in which the region of origin and the terminology are known. The typology is explained in Section D below.

69. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich dug-out, Andriy Nahachewsky, August 2, 1983.

70. Ibid., and Eurchuk, "Zhinochi doli," (Sask.).

71. Sadie Hunka, "Lupaschuk, Constantine and Ravett" biography, Dreams and Destinies, pp. 439-440.

72. John Lehr. Ukrainian Vernacular Architecture in Alberta (Edmonton: Alberta Culture, 1976), p. 13. Lehr cites a personal communication with Harry Koncohrada.

73. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

74. Ibid.

75. Telephone Interview with Mr. Nick Zukiwski, describing his father's immigration, Andriy Nahachewsky, August 3, 1983.

76. Sadie Hunka, "Lupaschuk, Constantine and Ravett" biography, Dreams and Destinies, p. 439.

77. I.A. P., "Teper, kolys," memoirs of Hryts Bulavka, p. 473.

78. Alex Skoreiko and John Presizniuk, "Presizniuk, Ivan and Elena" biography, Dreams and Destinies, p. 504.

79. I.A. P., "Teper, kolys," memoirs of Hryts Bulavka, p. 473.

80. Personal Interview with Mr. Mike Rusnak, Andriy Nahachewsky, June 16, 1983.

81. Personal Interview with Mr. William Herasym, Demjan Hohol, June 16, 1983.

82. Prykhodko, "Do pytannia," p. 52.

83. Compare the Zazula and Swyschuk cases.
Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.
Personal Interview with Mrs. Ramona Walker, describing the Swyschuk dug-out, Andriy Nahachewsky, July 16, 1983.

D. Range of Structural Forms

1. Primitive Type

84. Personal Interview with Mrs. Hilkow, Andriy Nahachewsky, June 14, 1983. Though other information suggests that Mrs. Hilkow was describing a slanted-roof shelter, it is possible that it was, in fact, a primitive conical type.

85. Personal Interview with Mr. Lackey, Andriy Nahachewsky, August 1, 1983.

86. I.A. P. "Teper i kolys," recollections of Hryts Bulavka, pp. 472-473.

87. These are the P. Pawliuk, Sydor, and Hilkow cases.

88. Personal Interview with Mrs. Verna Topolnisky, describing the Tokaruk burdei, Andriy Nahachewsky, August 4, 1983.

2. Deep-Hole Type

89. Personal Interview with Mrs. Kurylo, describing the Nimchuk dug-out, Andriy Nahachewsky, June 14, 1983.

90. Personal Interview with Mr. Mike Rusnak, Andriy Nahachewsky, June 16, 1983.

91. Personal Interview with Mrs. Kurylo, describing the Nimchuk dug-out, Andriy Nahachewsky, June 14, 1983.

92. Personal Interview with Mr. Mike Rusnak, describing his family's old burdei in Bukovyna, Andriy Nahachewsky, June 16, 1983.

93. Personal Interview with Mr. Tom Trefanenko, describing the Huculak structure, Andriy Nahachewsky, August 4, 1983.

94. Personal Interview with Mrs. Kurylo, describing the Nimchuk dug-out, Andriy Nahachewsky, June 14, 1983.

95. Personal Interview with Mr. Tom Trefanenko, describing the Huculak structure, Andriy Nahachewsky, August 4, 1983.

96. Personal Interview with an anonymous man from Bila Tserkva, Andriy Nahachewsky, June 16, 1983.

97. Personal Interview with Mr. Mike Rusnak, Andriy Nahachewsky, June 16, 1983.

3. Slanted-Roof Type

98. Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky _buda_, Andriy Nahachewsky, September 7, 1983.

99. See Chapter I.

100. Kosmina, _Silske_, p. 37.

4. Log-Wall Type

101. Recorded Interview with Mr. William Slemko, describing the P. Tkachuk dug-out, Radomir Bilash, January 31, 1980.

102. Ibid.

103. Personal Interview with Peter and Elsie Rybak, describing the Serna dug-out, Demjan Hohol, June 8, 1983.

104. Yushko structure, photographed in Figure 99.

105. See notes 103 and 104 above.

106. Recorded Interview with Mrs. Verna Znak, describing the Iwaschuk _buda_, Andriy Nahachewsky, June 15, 1983, and
Personal Interview with Mrs. Kurylo, Andriy Nahachewsky, June 14, 1983, respectively.

107. Kosmina _Silske_, pp. 37, 38 and 41.

108. Recorded Interview with Mrs. Anne Zailo, describing the second Lazhovsky dwelling, Andriy Nahachewsky, September 7, 1983.

109. Personal Interview with Mrs. Tanasichuk, Andriy Nahachewsky, July 28, 1983.

110. Personal Interview with Mr. Nick Cebuliak, describing his father's house of 1904, Andriy Nahachewsky, July 28, 1983.

111. Such criteria however, has been applied only to structures built above ground. All dug-out dwellings were considered temporary (even in the Swyschuk and Dmyterko cases, where the dug-outs were occupied for thirty years).

112. Recorded Interview with Mr. William Slemko, describing the P. Tkachuk dug-out, Radomir Bilash, January 31, 1980

113. Kosmina, Silske, p. 38.

114. Personal Interview with Mr. Sam Kitz, Andriy Nahachewsky, July 24, 1983.

115. Recorded Interview with Mrs. Verna Znak, discussing the Iwaschuk buda, Andriy Nahachewsky, June 9, 1983.

E. The Principal Type

116. The sample cannot be seen as offering a very accurate proportion, especially in terms of the primitive type structures, for reasons discussed above. This wide margin of frequency, however, does suggest at least some significance to the figures.

117. See Chapter I, endnote 89.

118. Telephone Interview with Captain John Partica, Andriy Nahachewsky, August 13, 1983.
"The Kishpan Family" biography, Dreams and Destinies, p. 395-396.

119. William Kurelek, The Polish Canadians (Montreal: Tundra Books, 1981) p. 12 where his picture portrays a very similar structure, and possibly Oringderff, True Sod, in her introduction, p. 4.

F. Later Uses

120. Recorded Interview with Mr. William Zabrick, George Semeniuk and Andriy Nahachewsky, July 28, 1983.

121. Personal Interview with Mr. Steve Pawliuk, Andriy Nahachewsky, August 11, 1983.

122. Personal Interview with Mrs. Josephine Sachkiw, describing the Myshliak buda, Andriy Nahachewsky, June 14, 1983.

123. Recorded Interview with Mr. William Zabrick, George Semeniuk and Andriy Nahachewsky, July 28, 1983.

124. Telephone Interview with Mr. Jim Koshure, describing the Pawliuk case, Andriy Nahachewsky, August 29, 1983.

125. Sadie Hunka, "Lupaschuk" biography, Dreams and Destinies, p. 439.

126. Personal Interview with Mr. William Herasym, Demjan Hohol, June 16, 1983.

127. Personal Interview with Mrs. Anne Zailo, describing the Lazhovsky structure, Thomas Nahachewsky, August 31, 1983.

128. Personal Interview with Peter and Elsie Rybak, describing the Serna structure, Demjan Hohol, June 8, 1983.

129. Personal Interview with Mike Rusnak, Andriy Nahachewsky, June 16, 1983.

130. Personal Interview with Peter and Elsie Rybak, describing the Serna structure, Demjan Hohol, June 8, 1983.

131. As described in Chapter I.

132. Personal Interview with Mr. Dave Hohol, describing the Partica burdei, Demjan Hohol, June 6, 1983.

133. Telephone Interview with Mrs. Zonia Shevelop, describing the Natchuk dug-out, Andriy Nahachewsky, June 16, 1983.

134. Ibid.

135. Personal Interview with Mrs. Harsulla, describing the Dmyterko dug-out, Andriy Nahachewsky, July 28, 1983.

136. Telephone Interview with Mr. Jim Koshure, describing the Pawliuk dug-out, Andriy Nahachewsky, August 29, 1983.

137. Ibid.

138. Personal Interview with Mr. Nick Kupchenko, describing the Basaraba dug-out, Demjan Hohol, June 8, 1983.

139. Personal Interview with Peter and Elsie Rybak, describing the Serna dug-out, Demjan Hohol, June 3, 1983.

140. Personal Interview with Mrs. Mary Boyko, Andriy Nahachewsky, June 14, 1983.

141. Ibid.

142. Personal Interview with Mr. Paul Sembaliuk, describing the Ruptash dug-out, Andriy Nahachewsky, June 15, 1983.

143. Telephone Interview with Mrs. Zonia Shevelop, describing the Natchuk dug-out, Andriy Nahachewsky, June 16, 1983.

144. Telephone Interview with Mr. Charles Bordian, Andriy Nahachewsky, July 14, 1983.

145. Personal Interview with Mr. Dwayne Ternoway, describing the Logozar, Taschuk and Nykolaichuk dug-outs, Demjan Hohol, August 2, 1983.

Chapter IV: Land Use

Chapter IV: Land Use

A. Homesteads

In contrast with the average Galician peasant landholding of three hectares (seven and one-half acres),[1] a homesteader in Canada was given 160 acres - more than twenty times as much land. The vast prairies were surveyed into townships, sections, and quarter sections prior to and during the immigration period at the turn of the century. If he knew how to read the numbers and symbols, an immigrant could identify any quarter section by the survey marker posted in the corner of the land. Quarter section homesteads were square in shape, one half mile along each side.

Coming from a crowded village, a peasant from a village felt as if he was setting up his homestead in the center of a vast wilderness. In many cases, this was literally true. Two or more neighbours sometimes built their farmsteads in adjacent corners of their properties so that their respective houses were within calling distance. If the settlers had not yet identified their own property, they may have set up a temporary shelter on another immigrant's homestead,[2] or simply in any vacant area.[3] Arrangements such as these allowed groups of several families to construct dwellings in the immediate vicinity.[4]

B. Topography

The topography of east central Alberta at the turn of the century consisted of large expanses of forested areas, grassed prairie, meadows and swamp. Each quarter section of land contained all or most of these features in a given proportion and arrangement, as dictated by the arbitrary survey lines. Several characteristics of the property were immediately relevant for the immigrant.

Forested areas were of special concern to the settler because of the shortage of wood in Western Ukraine.[5] Alberta forests contained primarily white and black poplar, spruce, as well as pine, tamarack, willow, birch and other species.[6] Trees were necessary for the construction of dwellings and other structures as well as for fuel. A large part of these forests would eventually be broken and cleared for the cultivation of grain crops.

Meadows and open prairies were the most immediately available for cultivation. Various prairie grasses grew to heights of up to two meters on the virgin prairie. The land had to be plowed and seeded to grow a crop. Damper meadows and sloughs provided thickly rooted topsoil which was best for cutting sod, an important building material. The grasses could be cut with a scythe or sickle, or by hand to be used in construction and as a bedding material. These grasses could also be piled to provide hay for the stock in winter.

The water level in east central Alberta was higher at the turn of the century than it is today. Marsh, swamp and bog covered the lower areas of the land. Lakes, rivers and creeks were larger.[7] The water table has lowered significantly since that time with the clearance of a great deal of forest cover and other human activities.

While considering trees and water, an immigrant also had to concern himself with the availability of good dry land suitable for cultivation. The concern lessened after several years, as the land was cleared and dried itself. The house would have to be located on a higher, dryer area, yet not far from a source of water.

The contour of the land varied in different areas that were open for settlement. River valleys and creek beds often cut sharp contours into the land, and certain areas consisted of hilly and rolling terrain. Other areas were quite level and extended for miles. The terrain had to be considered in terms of quantity of cultivatable land, farmyard location, water supply and other factors. The quality of the topsoil would also obviously affect the future success of a farming operation, and as such, this had been a major concern for Ukrainian immigrants since the arrival of Pillipiw and Eleniak.[8] Most of the immigrants from

Ukraine had been farmers in Europe, and were experienced in dealing with soil. This new land, however, was different, and it was difficult to accurately predict which land would be most productive from under the grasses and trees. Certain areas were more readily identified as poor land. They may have been sandy, rocky, gravelled, or alkaline. The topsoil in other areas may have been very thin. The clay underneath the topsoil would eventually be valuable during construction of many types of buildings, though the immigrant did not have to concern himself with this factor since sufficient clay could be found almost anywhere.[9]

The selection of a site was the first task in constructing a temporary dwelling. The factors affecting this selection were different in various situations. If the shelter was being built only for the short term, and the settler intended to relocate as soon as he found a better or more definite site, then the process of site selection was quite simple, and less important. Chance became a major factor, and the settler choose the first location which was not unsuitable. His priority was expediency, and the site would soon be abandoned anyway.[10] In these situations, it was best to choose a site protected from wind and rain. An area near taller trees was suitable for this purpose, as was the side of a hill in some contexts.[11] If the structure was being built on a temporary site near another settler's dwelling, then proximity to this dwelling weighed heavily in relation to all other factors.[12]

If, on the other hand, the temporary dwelling was being built on the immigrant's own property, he took more care in selecting a site for the structure. The factors of wind, rain and proximity to a neighbour were again important considerations, but several other new factors came into play. It was important to select a site on higher ground to minimize dampness and the chance of flooding.[13]

The proximity to a water supply was important, so that the inhabitants did not have to carry water long distances for domestic use. A well was later to be dug. The site was often selected so that it was near the cultivatable land, and near the access road.[14] The access roads had been surveyed as early as the sections themselves, though they existed only in theory during the first years of settlement. This factor was more important when the homesteads became more established, roads were being built, and vehicular traffic increased.

C. Development

Once the site had been selected and a temporary or more permanent dwelling had been erected, the farmyard began to develop. Two main stages of development can be identified in relation to the temporary dwelling period. The time span of each phase of development varied. Some families lived on the site for several years before the second stage was completed.[15] Others passed through these periods in the course of one summer.[16] The characteristics of each stage can be generalized.

The first stage in the establishment of a homestead included the immediate period of building the homestead to facilitate the fundamental activities of survival. At this point, the site was still very simple, and its natural features predominated. The burdei itself had been built, the immediate area around it, as well as an adjacent work area had been cleared. In the process of construction, an area of bush and trees had been cleared to provide materials. At least the larger tress nearby had been felled. The foilage and branches which had been discarded during construction lay strewn about the woods or were piled on a certain spot. A nearby grassy area had been scythed or plucked for the straw bed and roof, and an area near a slough had been stripped of turf which had been placed onto the roof. A fireplace had been established near the dwelling for cooking and warmth, and other smoldering piles nearby served as smudges against the mosquitoes. If the family owned a wagon, it was parked nearby, as were major implements such as a plow, harrows, or others. Any domestic animals roamed free.[17]

The second phase of early development was characterized by a greater development of secondary facilities. The dwelling itself was more complete, a layer of plaster was applied to the gable ends, for example, and a more permanent door of planks was installed. A larger

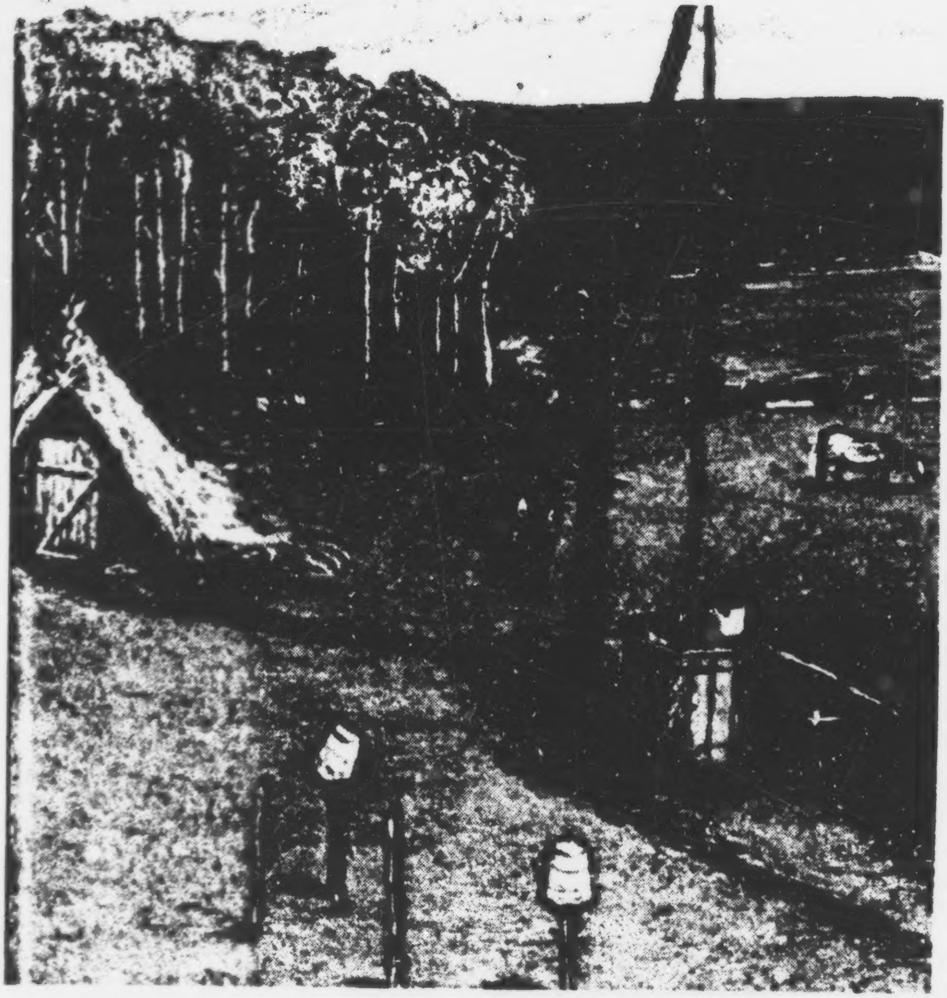


Figure 54: Kurelek 2. Burdei used for storage in a later farmyard. (Detail of a painting by William Kurelek, printed in Burke, The Ukrainian Canadians, p. 7)

area was cleared immediately surrounding the structure, and paths were worn to the water source and other frequented areas. A garden area (horod) was cultivated and planted. A fenced area (grazhda) was built in the "yard" to house the cow. A site was already chosen and cleared for the permanent house, and trees from nearby were being felled, cleaned, and hauled to the location. In another area, an acre or two of prairie had been plowed and was seeded, or was ready for the spring. A pit had been dug for garbage. A large part of this work was often done by the women and children, since the husband may have gone away to earn some money.

The early period of a homestead ended with the completion and occupation of the permanent house. A barn, granary, and other domestic buildings were usually built near this point. More land was broken and cultivated, and the family acquired draft animals, fowl, major implements, and other goods.

D. Layout of Sites

The layout of early homesteads varied significantly according to natural features of the site and the means of the occupants, as well their own spacial conceptualization. Several sample cases shall illustrate these factors.

The Pawliuk dug-out was built by Wasyl and Maria Pawliuk in 1900 (NW 32-52-15 W4). It was located at the top of a hill which sloped down to a creek. The hillside sloped down to the north and as such the entrance to the structure likely faced north.[18] The hillside location was probably selected because it was easier to excavate a structure into an incline. The burdei itself was located very near the top of the hill, the highest point on the property. The creek, a water supply, ran less than 30 meters away. The family likely owned one ox at this time and built some sort of shelter for it, possibly also dug into the hillside.[19] The family occupied this structure from mid-summer until November, or possibly until the next summer. The immediate site of the dug-out was not highly developed.

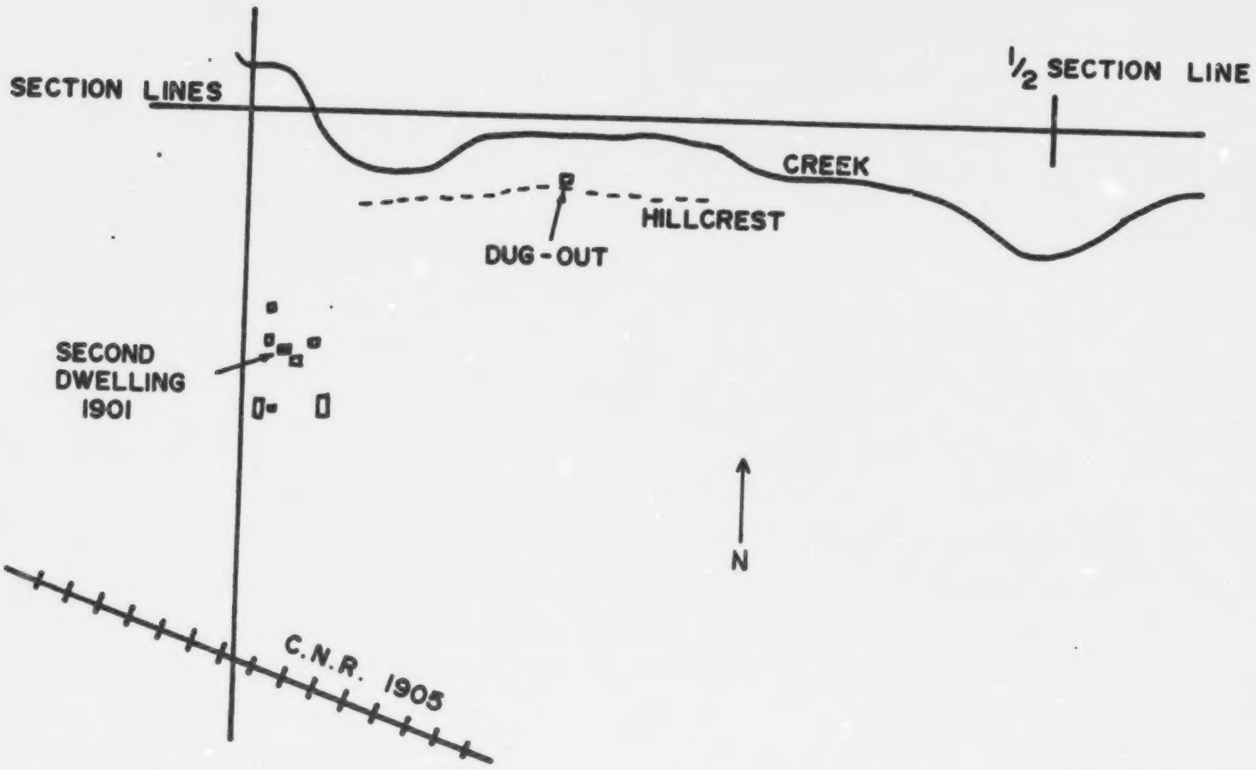

SECTION LINES
½ SECTION LINE
CREEK
HILLCREST
DUG-OUT
SECOND DWELLING 1901
N
C.N.R. 1905

Figure 55: The Pawliuk site. From a 1950 aerial photograph.

A second side was selected for the construction of their second dwelling. This site was more visible, near the acess road and the planned CNR tracks. It was located approximately 350 meters from the original site. The farmyard eventually developed around the second dwelling. The dug-out shelter remained abandoned and likely untouched for years. It was used to bury dead animals and for a variety of refuse during the 1930s.[20]

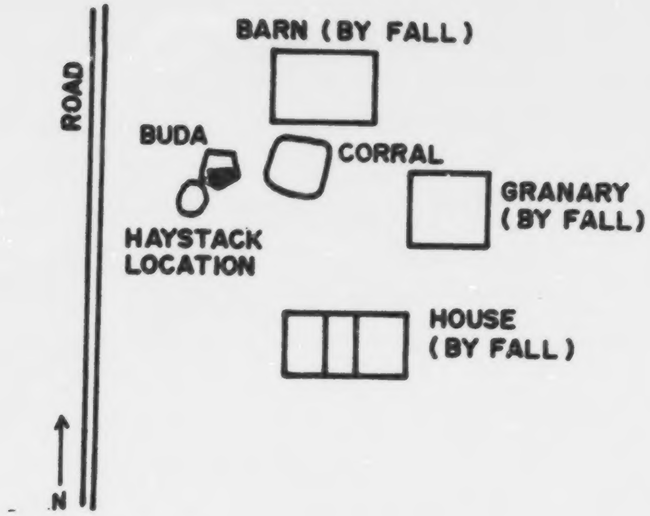


Figure 56: The Svarich site

The site of the Svarich buda was on a slight incline, not far from the access road on the west side of their property. The son-in-law and daughter of Ivan and Maria Svarich, had claimed land immediately south west of that property. The Svarich dug-out faced south. Nearby, a fence woven of sticks (grazhda) encircled an area in which a cow was kept. A pile of hay was collected for the cow and horses. A garden had been planted at a previous rented residence, and likely some of the vegetables were transplanted when the family moved onto the homestead. The extended family owned four horses, a cow, some sheep and possibly some fowl by that time. By fall, they constructed a barn (stainia) for their animals, a three roomed house (khata) for themselves, an even a granary (shpekliar). The house was built to the south of the other buildings, facing south itself. The family also cleared some land before snowfall.[21]

The Swyschuk, Mochoruk and Chipiuk families arrived in Canada in 1900. Travelling along the Victoria trail from Strathcona, they stopped when they arrived at a spot along Beaverhill Creek. Several Ukrainian pioneer families, including these three, built temporary shelters into the tall bank on the north side of the creek. The shelters faced south, overlooking the creek, which supplied fish and water. The Mochoruk,

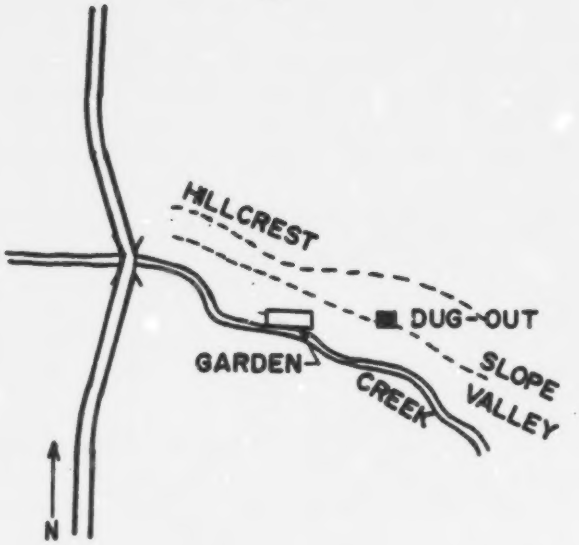

HILLCREST
DUG-OUT
GARDEN
SLOPE
CREEK
VALLEY
N

Figure 57: The Swyschuk site

Chipiuk, and other families soon dispersed to their own lands but the Swyschuks lived in their log-wall structure in the creek's hill for many years. They eventually planted a garden nearby and developed a complete farmyard there.[22]

ENDNOTES

Chapter IV: Land Use

A. Homsteads

1. Kaye, Early Ukrainian Settlements, p. 12. The statistics are drawn from Oleskow's Pro vilni zemli.

2. Mariia Adamovsky, "Pionirski harazdy v Kanadi," Propamiatna knyha ukrainskoho narodnoho domu v Vinnipegu. (Winnipeg: Ukrainskyi Narodnyi Dim, 1949), (Sask.), p. 452.

3. Recorded Interview with Mr. William Zabrick, George Semeniuk and Andriy Nahachewsky, July 18, 1983.

4. Personal Interview with Dwayne and Joanne Ternoway, describing the Logozar, Taschuk,and Nykolaichuk structures, Demjan Hohol, June 9, 1983.

B. Topography

5. As discussed in Chapter I: B.

6. William George Hardy, Alberta: A Natural History. (Edmonton: Hurtig Publishers, 1967), pp. 151-160.

7. Recorded Interview with Mrs. Verna Znak, describing the Iwaschuk buda, Andriy Nahachewsky, June 15, 1983.
Recorded Interview with Mr. William Zabrick, George Semeniuk and Andriy Nahachewsky, July 28, 1983.

8. Czumer, Recollections, p. 14.

9. Personal Interview with Mr. Nick Cebuliak, Andriy Nahachewsky, October 9, 1983.

10. Recorded Interview with Mr. William Zabrick, George Semeniuk and Andriy Nahachewsky, July 28, 1983.

11. I.A. P. "Teper i kolys," recollections of Hryts Bulavka, p. 472.

12. Adamowsky, "Pionirski Harazdy," (Sask.), p. 452.

13. An example of a site selected too close to a low pond can be found in the M. Tkachuk case. The water level rose and eventually muskrats burrowed right into the structure to steal potatoes stored there. Telephone Interview with Mrs. Lillian Semeniuk, Andriy Nahachewsky, July 26, 1983.

14. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich site, Andriy Nahachewsky, August 2, 1983.

C. Development

15. Personal Interview with Mr. Tom Trefanenko, describing the Huculak dug-out, Andriy Nahachewsky, August 4, 1983.

16. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich buda, Andriy Nahachewsky, August 2, 1983.

17. Stashyn, "Spohady," (Man.), translated and exerpted in Kaye, Early Ukrainian Settlements, p. 39.

D. Layout of Sites

18. This feature is atypical and problematic. A south or east facing door was much more common. There are no south or east facing slopes on the property.

19. Personal Interview with Mr. Steve Pawliuk, Andriy Nahachewsky, August 26, 1983.

20. Personal and Telephone Interviews with Mr. Steve Pawliuk, Mr. Harry Pawliuk, Mr. John Pawliuk, Mrs. Katherine Kuzyk, Mrs. Marie Popil, Mr. Jim Koshure, Mr. Bill Koshure, Mr. Victor Koshure, Mr. Stan Kuzyk, and Mrs. S. Kuzyk, Andriy Nahachewsky and Demjan Hohol, June 28 to September 23, 1983.

21. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich buda, Andriy Nahachewsky, August 2, 1983.

22. Personal, Telephone and Recorded Interviews with Mrs. Ramona Walker, Mr. Patrick Walker, Mr. John Winnick, describing the Swyschuk dug-out, Andriy Nahachewsky, July 9 to July 27, 1983.

Chapter V: Structure

Chapter V: Structure

Each type of temporary dwelling was characterized by certain unique structural features, though other elements were shared by several or all types. The slanted-roof type structures are dealt with first and in greatest detail. Characteristics of the other types of structures are dealt with separately insofar as they are unique.

A. Slanted-Roof Type

1. Method of Construction

The first step in construction of a slanted-roof burdei was the selection of a site and the digging of a suitably sized hole. At that point, it was necessary to cut and size logs for the beam and posts as well as thinner rails for the sloping planes of the roof.

Once the wooden frame was assembled it was covered by some combination of grass, sod, earth and/or branches. An opening was left to function as an entrance. Some type of door was fastened to it. Where the pit was deeper, it was necesary to add an entrance-way of earthen stairs. A stove and facilities for smoke ventilation were accommodated within the structure. A window or two may have been built. The surfaces of the structure were occasionally finished with a layer of plaster made from clay or chopped grass.

The general plan of construction varied, as did the structure itself. In the case of the Zailo burdei, no pit was dug at all, and the roof rails were covered only with grass. This particular structure was built to accommodate two adults and their two infant children, and was intended for only a few months occupancy in the summer.[1] The Stefan Shandro burdei, on the other hand, was much larger and sturdier. The

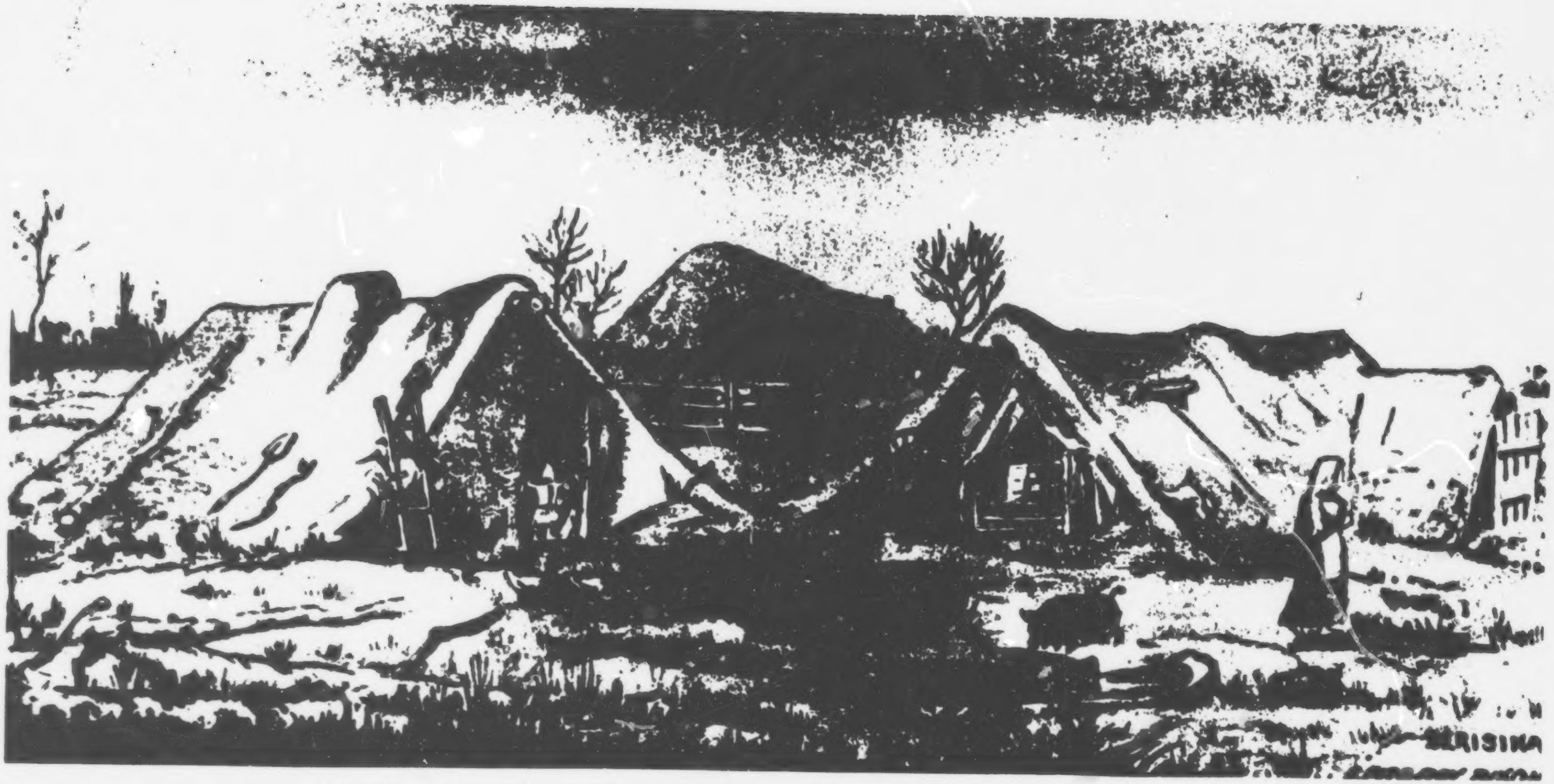


Figure 58: Watercolor of a farm at Berisina, N.W.T. (now in Saskatchewan) by F. Fitzroy Dixon, October, 1889. Berisina was settled by Germans from South Ukraine. (Public Archives of Canada C47 332, Accn. no. S77-38.)

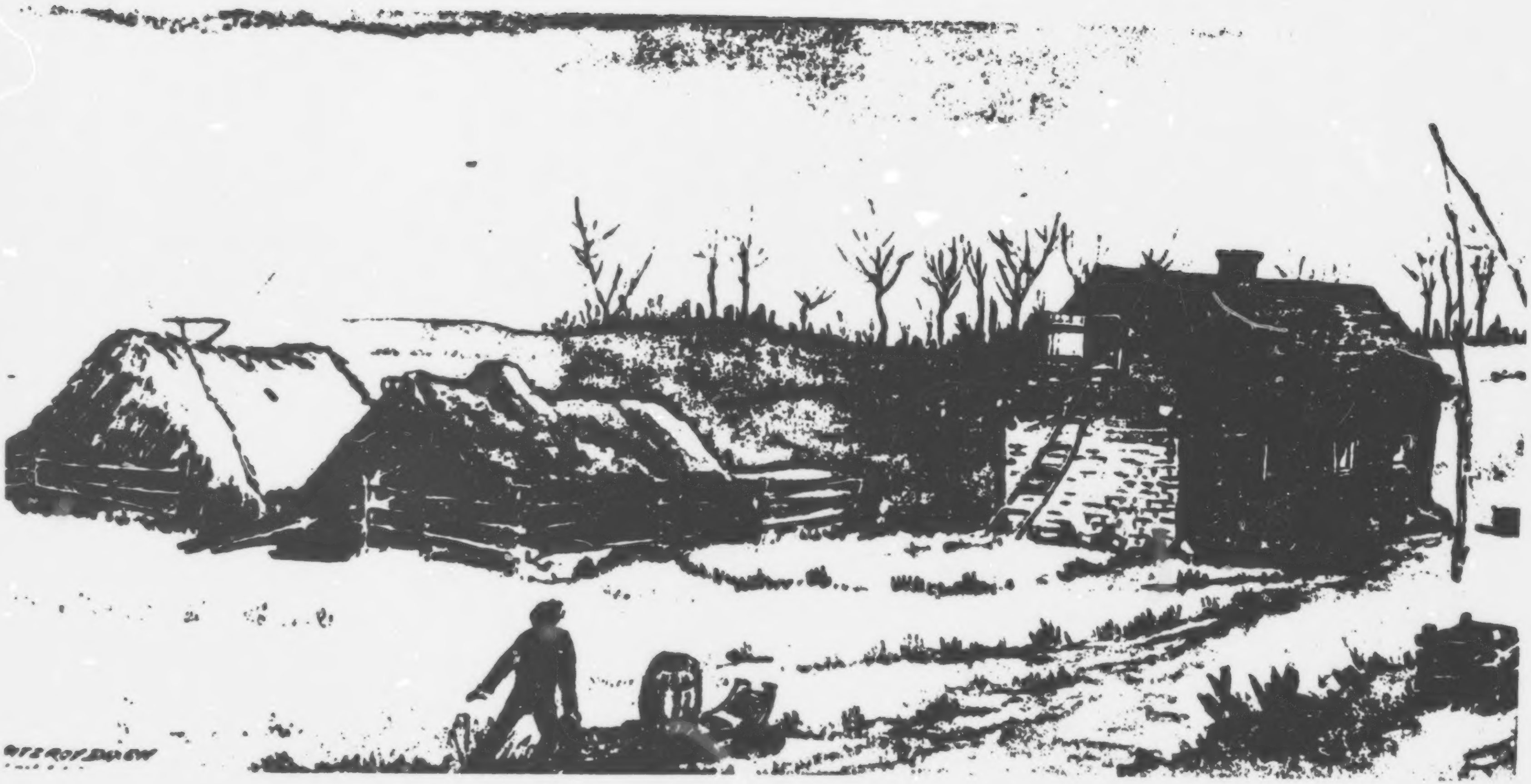


Figure 59: Watercolor of a farm at Berisina, N.W.T. (now in Saskatchewan), by F. Fitzroy Dixon, November, 1889. (Public Archives of Canada C47 333, Accn. no. S77-38.)

beams of the roof were covered with a thick layer of earth and the interior surfaces were plastered. At least four adult males contributed to its construction, and several complete families occupied the structure for more than one year.[2]

The time required for the construction of this type of structure also varied according to the tools available, manpower, skill of the builder, and elaborateness of the shelter. In many cases, the structure was built as quickly as possible in order to afford some basic shelter for the homeless immigrants. A simple burdei could be built within one day.[3] On the other hand, immigrants who made use of some other form of shelter in the interim were able to construct a larger, more sturdy, and more insulated structure. Complex construction may have taken up to two weeks.[4]

Burdei of all types required regular maintenance, especially in regard to water resistance. It was not uncommon to patch a roof after a heavy rain. Moreover, when any aspect of the structure proved unsuitable, it was quite possible to reassemble or add structural elements to the dwelling. The Shemko case illustrates such a rebuilding.[5] Their burdei leaked badly at first, and the inhabitants were terrified of the snakes and frogs which burrowed through the earth and into their living space. The family decided to lift the sod off the roof and plaster the entire structure with a mixture of clay and chopped grass. The rebuilt dug-out was then recovered with sod. From that point on it repelled water and prevented animals from burrowing in. The burdei provided enough insulation for the family to survive a winter there.

In another case, a dug-out dwelling was completely flooded in heavy rains. The family contended with the situation by moving their possessions and the structure itself onto higher, dryer ground.[6]

2. The Excavation

The interior floor level of burdei and zemlianky was generally situated below the level of the terrain. This feature, however, was not

Table 17: Principal Type

Excavation, Depth, Dimensions, Walls

	no excavation	0 - .74 m	.75 - 1.29m	1.30 - 2.00m	over 2.00m	hillside	flat area	width (m)	length (m)	sandy soil	clay	walls	not reinforced	horizontal logs	plastered walls	special pit features
Archiniuk							x	3.6	6	x		x			x	
Bar-V-nok							p					x	p			
Berisina(?S)			x				x				?	x	x			
Bordian						x						x				
C.A.	x						x					-				
Chmilar												x				
Dmyterko				x				2.1	2.1			x				x
Educ. Report	?						x	4.2	5?			?				
Eurchuk (S)				x							x	x	p		x	
Harasewich		p	p				?					x				
Hawreliak		x										x		x		
Hilkow	x											-				
Jubilee book			?									x			?	
Kurelek, 1			?				x	3	5?			x				
Kurelek, 2							x					x				
Kurelek, 3		?					x	3.5	6?			x				
Lazhovsky	x						x					-				
Lepetsky						x					x	x				
Malayko			x									x				
Natchuk						x						x				
Osinchuk			x									x	p			
Ruptash		x				?	?	3.6	6			x				
Sachkiw			x					2	2			x	p			
Shandro, N.		p					x	3	4?			x			x	
Shandro, S.		p					x	3.6	6?			x			x	
Shemko		x				x						x	p			
Socholotoski			x			x						x				
Svarich		x				x		3.6	3.6?			x				x
Svarich, 2			x									x	p			x
Zabrick		x	?				x					x	x			
Zazula		x	?				x	3	4.3			x				x

essential to temporary dwellings built in Ukraine[7] nor in Alberta. The terms buda, burdei, zemlianka, and others are used by Albertan Ukrainians in reference to semi-subterranean structures, as well as to those built wholly above ground.

The Lazhovsky buda was built above ground. Although some of his neighbours did dig a hole for their budy, Mr. Lazhovsky decided not to do so.[8] He intended to occupy the buda for only a few months that summer. In the majority of cases, however, an excavation was made. The depth of these pits varied. Some are described as shallow,[9] less than 0.74 m.[10] In other cases, men dug pits so deep that only their heads were visible above the ground.[11] One structure was described as over two meters deep.[12] A pit this deep may have taken an entire day, or even longer, to dig with a hand shovel.[13]

Table 18 demonstrates that the most frequent depth for such structures was 0.75 to 1.29 m. It has been suggested that burdei were generally not deeper than this, in order to allow for lighting and ventilating the structure. (Ice houses, by contrast, were often two meters deep since windows were not necessary and maximum insulation was attained at a greater depth.[14]) Digging the burdei into clay was arduous, but guaranteed that the walls of the structure were strong, and clean on the interior. Conversely, building it in sandy soil was much easier and faster, but meant that the walls would need reinforcement and were more likely to cave in.

A significant number of dug-out shelters were built into hillsides rather than on flat ground. The floor of such a structure would be excavated out of a hillside until it was level, and the pit varied in depth from front to back. The entrance to such a structure invariably faced downhill. Some informants emphasized that hilly areas were actually better suited for dug-out shelters than flat land.[15] There were several advantages to digging a burdei out of a hill. First, less digging was required to excavate a hole of sufficient size. Second, the back wall, sunk into the hillside, was earthen and well insulated and there was no need to construct one of rails and/or sod, as

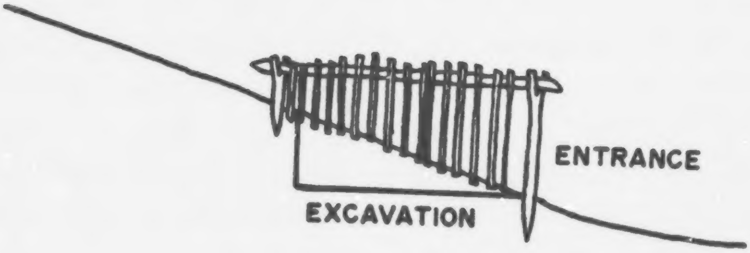


Figure 60: Concept drawing of a hillside dug-out. Profile.

was the case in other structures. Finally, water drainage was less a problem in hillside dug-outs, especially where the front of the structure was level or slightly higher than the surrounding earth. Rainwater would run off the sides of the structure and continue down the slope rather than collecting in or near the excavation. In terms of the shape of the dug-out, it altered to allow for greater and more functional interior space at the rear of the structure.

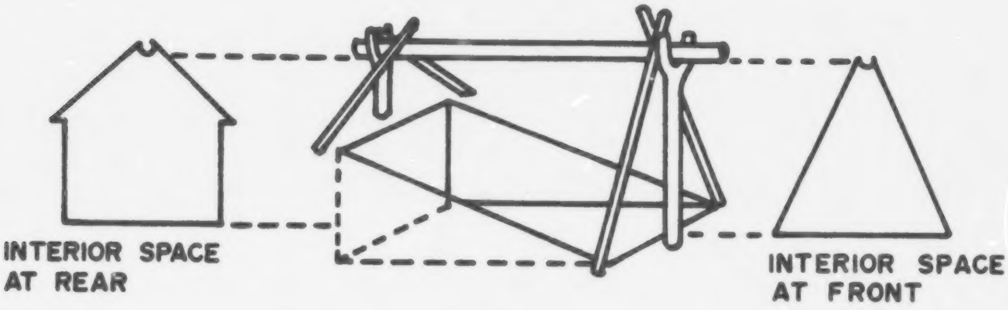


Figure 61: Concept drawing of the interior space in the front and in the rear of slanted-roof dug-outs built into a hill.

Figure 61 shows the greater depth of the excavation at the rear, and how this enlarges the interior space, especially along the walls of the structure.

The width and length of the pit varied with the overall size of the structure itself. The Sachkiw structure was reportedly only two meters square,[16] as was the Dmyterko dug-out.[17] The Dmyterko dug-out was built specifically for a single male occupant. Structures built for families or groups were much larger, especially if they were to be occupied for an extended period. The Herasym structure was reportedly 4.8 x 6.5 meters.[18] The Archiniuk structure measured some 4 x 6.5 m,[19] and was occupied for seven years. Several other *burdei* have been described as being nearly as large.[20] However, a more typical size for these structures seems to have been approximately 3 x 4.2 m.[21]

In the majority of cases the *burdei* pit had a regular shape with a rectangular floor and vertical walls. Several significant deviations from this regular shape, however, have been identified. In describing a *burdei* approximately 60 cm deep, one informant suggested that a "bench" fashioned from earth was left intact along one of the walls, parallel to the major axis of the structure.[22] This "bench" was described as being 45 cm wide and 45 cm tall. It was especially useful as a play and sleep area for small children. The "bench" was not specifically used as a seating area for adults since the slanted roof of the structure was very low along the sides.

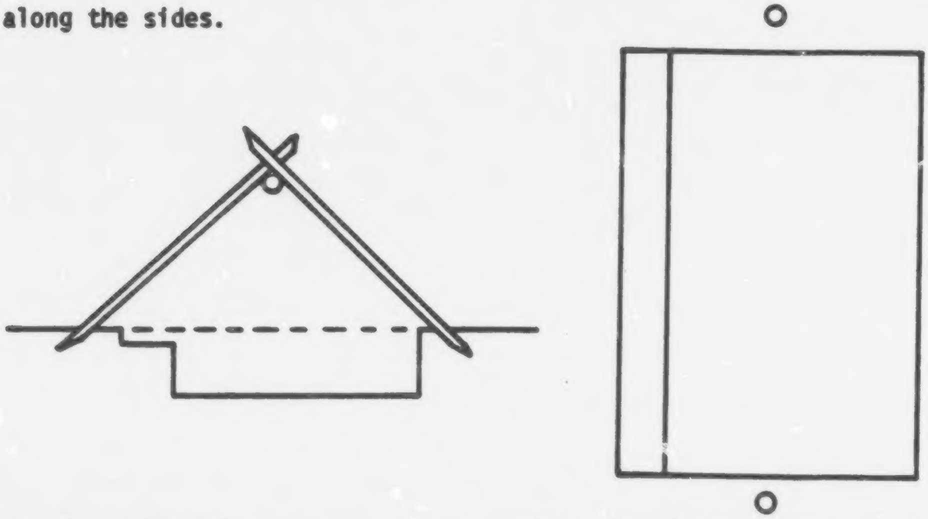


Figure 62: Concept drawing of an earthen bench in the side of a slanted-roof dug-out.

The topsoil of that particular area was removed in order to expose a more suitable clay surface. The edges around the hole (*berehy navkolo* iamy) are mentioned in reference to other cases as being useful for storage of cooking utensils, clothing, etc.[23]

The Svarich buda illustrates this same concept. In this case, a bench and a large sleeping area were left unexcavated. The actual floor area of the pit occupied only half of the interior area of the structure.[24] The lower "floor" level of the burdei was dug only as deep as an adult's shin, thus the "bench" and "bed" were at a comfortable height for sitting. The original grass growing on the "bed" and "bench" areas were left intact.

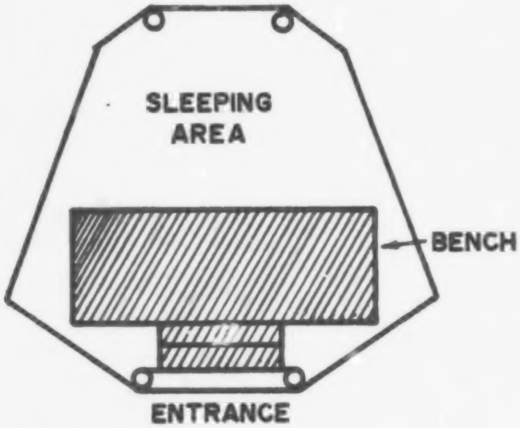


Figure 63: Reconstruction of the Svarich buda showing floor plan and excavated area.

A third variation in pit design was found in the dug-out dwelling of Alex Dmyterko, built in 1930.[25] This structure was less than eight feet square and approximately four or five feet deep. A long, round tunnel was carved into the earth in the west wall of the structure, measuring approximately two to three feet in diameter. Cloth and rags were spread inside this burrow and the occupant crawled into it to sleep at night.

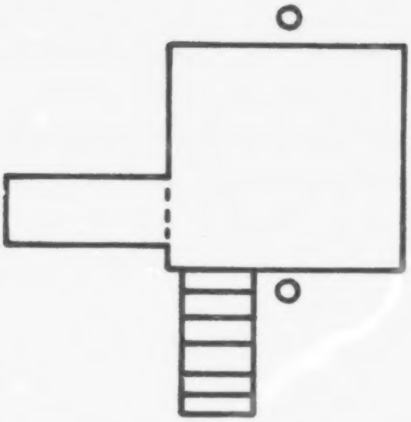


Figure 64: Reconstruction of the plan of the Dmyterko dug-out.

The excavation of benches and sleeping areas in the earthen walls of burdei is also documented in sources of historical architecture in Ukraine.[26] M.M. Strishenets notes that the "forms of benches have developed through many centuries. In the eighth and ninth centuries, benches and burrows were cut into the earth near the walls, and used for sleeping areas."[27] This practice was also common in the nineteenth century when ". . . instead of holes and benches . . . they often left an earthen platform along the walls, reinforced with slabs of wood."[28]

3. Walls

The walls of these structures consisted of the raw or reinforced earthen sides of the excavated pit. In some cases, the walls were over two meters tall, whereas in others they were only 60 cm tall or did not exist at all.[29] The height of the walls increased from front to back in dug-outs built into sloping ground.

If the structure was built into stiff clay, the walls may not have been reinforced at all. They may have been smoothened or coated with a better clay to minimize crumbling. This was likely the case with the majority of Ukrainian dug-out dwellings in Alberta.

Earthen walls built into sandy soil required some means of support. Certain descriptions depict the walls of these pits supported by large logs laid horizontally one onto the other and possibly notched.[30] The technique of notching, or jointing the logs has not been specifically identified.

4. Structural Framework

a) Frame

The frame of the principal type of burdei was built in one of several variations. In structures of this type, the bulk of the roof mass was supported by a long beam, or beams, suspended horizontally along the major axis of the structure. This beam was sometimes referred to as a svolok. (The same term is used to denote the central beam in houses, and other buildings in Ukrainian folk architecture.[31]) One informant, however, maintained that the term svolok is reserved specifically for that component in a house, and could not be applied to a primitive structure such as a burdei. This informant, and others, referred to the beam as a sliup.[32] Other terms applied to the horizontal beams were ligar,[33] brus,[34] and log.[35]

The main beam, or beams, rested upon an arrangement of upright posts. The beam and posts were generally made of local poplar. However, in at least one case, the wood was bought and transported to the

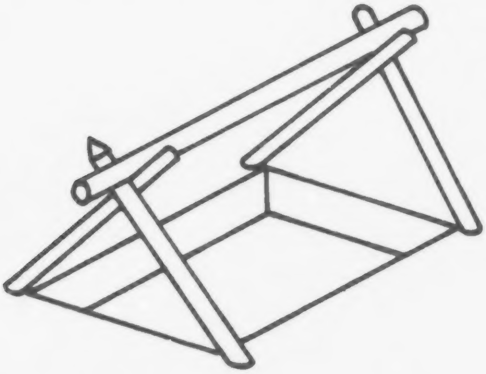


Figure 65: Saw-horse frame.

Table 18: Principal Type

Structural Frame, Rails

	saw-horse frame	2 post	3 post	4 post	non-rectangular	unshaven wood	debarked wood	posts inside	posts outside pit	door off center	door centered	rails various lengths	rails trimmed
Archiniuk		x								x			p
Bar-V-nok	?	?									x	x	
Berisina(?S)	?	p					p		p	?	x		x
Bordian													
C.A.		x				x			x	x		x	
Chmilar													
Dmyterko	?	p				p				p			p
Educ. Report			?	p			x		x		x		x
Eurchuk (S)	p										?		
Harasewich													
Hawreliak		p								p			
Hilkow												p	
Jubilee book			p	?			x		?		x		x
Kurelek, 1													x
Kurelek, 2													x
Kurelek, 3												x	
Lazhovsky		x				x				x		p	
Lepatsky													
Malayko													
Natchuk													
Osinchuk		x								x			
Ruptash		x								x			
Sachkiw		p										x	
Shandro, N.		p											
Shandro, S.													
Shemko		p											
Socholotoski		p					x						
Svarich					x	p							
Svarich, 2													
Zabrick		p				p		x		p			
Zazula		?				x				?			

site.[36] The support posts were tall enough to permit the occupant to stand at full height beneath the beam and roof.[37] The vertical posts were referred to as sliupy, slupy, or powsty.[38]

One possible variant of the structural frame features the main horizontal beam resting upon two angled posts forming a saw-horse type frame. This frame type is suggested by illustrations showing a door situated in the center of the gable wall, in combination with a single central beam above. Such structures are found in William Kurelek's works, Figures 51 and 54.

In the description of the Eurchuk structure built in Saskatchewan in 1903, the builders ordered and purchased a saw-horse frame, (kozly), if not in its entirety at least in components.[39]

A more common variant of framework for this type of dug-out dwelling consisted of a beam suspended from two vertical posts. In some cases, the poles were selected so that a natural fork was located at their upper end. The two branches of the forks (khabiny)[40] were cut short. The horizontal beam was then set into these forks.

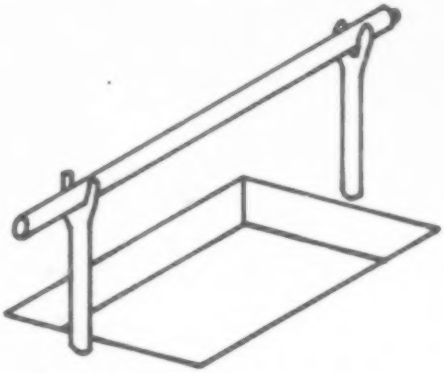


Figure 66: Two-post frame.

In several cases, vertical posts were described as being dug into the earth on the outside of the hole.[41] This arrangement ensured that the walls extended over the edge of the pit, preventing rain and various other substances from trickling or dropping into the hole. Thus the edges of the excavation and its interior walls were well protected from the elements. This is illustrated in the following Figure.

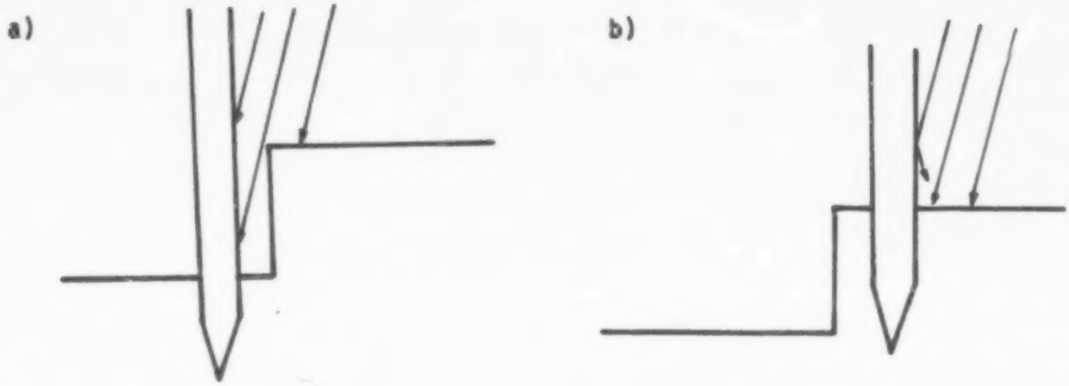


Figure 67: a) Post located on the interior of the excavation allows matter to enter the excavation. b) Post located at the exterior of the excavation protects the pit wall.

The structural weakness of this arrangement, however, lies in the fact that, when subjected to stress, the post itself could dislodge the relatively unsupported volume of earth between it and the interior of the excavation. (This volume is labelled V in Figure 67 c). One structural description did suggest that the two posts were imbedded inside the hole.[42] It must be assumed that further structural materials such as rails and sod were placed to cover the edge of the pit. See Figure 67 d).

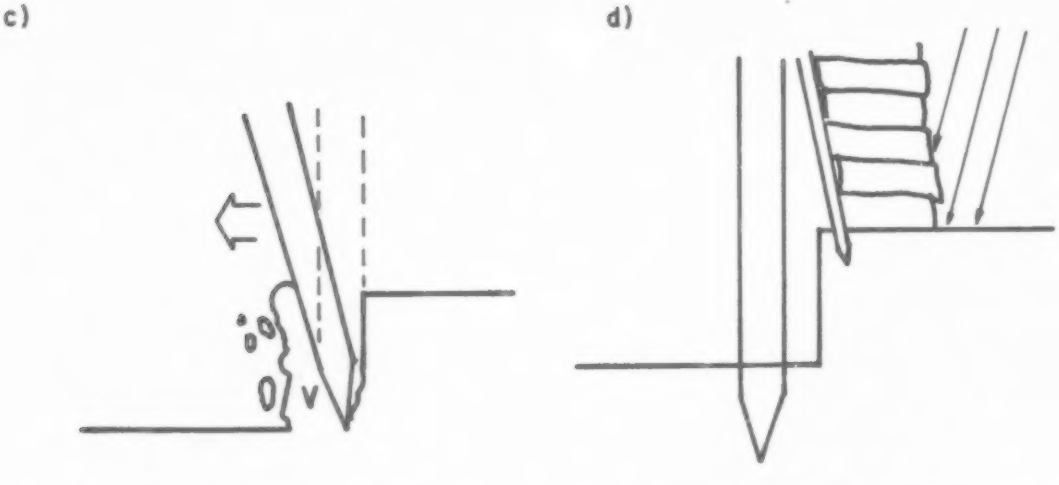


Figure 67: c) Post located at the exterior of the excavation may dislodge the adjacent volume of earth. d) Post located on the interior of the excavation with other structural materials protecting the excavation wall.

A third type of frame involved a more complex building technique. Rather than consisting of a single post at each end of the dug-out, there were two poles and a short crossbeam at the front. One or two long beams extended from the crossbeam along the structure's main axis to a single or double post support in the rear.[43]

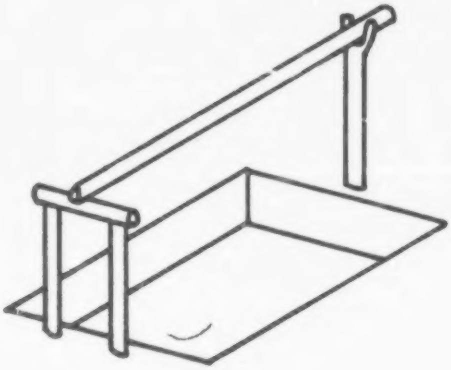


Figure 68: Three-post frame.

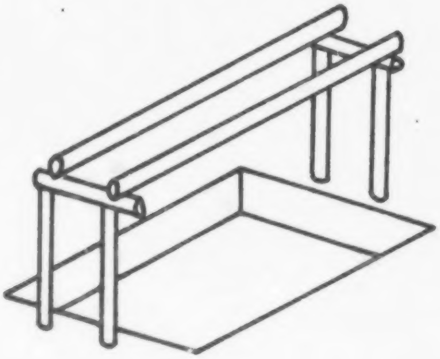


Figure 69: Four-post frame

The entrance to these structures was located between the two front supporting posts. Such structures are suggested by Figures 71 and 77.[44]

Four-post frames represented an advanced development which improved the interior space of the structures. The area between the two beams was enclosed with a third, horizontal plane of rails. Without altering the gross dimensions of the structure, a four-post frame significantly increased the interior volume of the dug-out, as demonstrated by the shaded areas in the figures below.

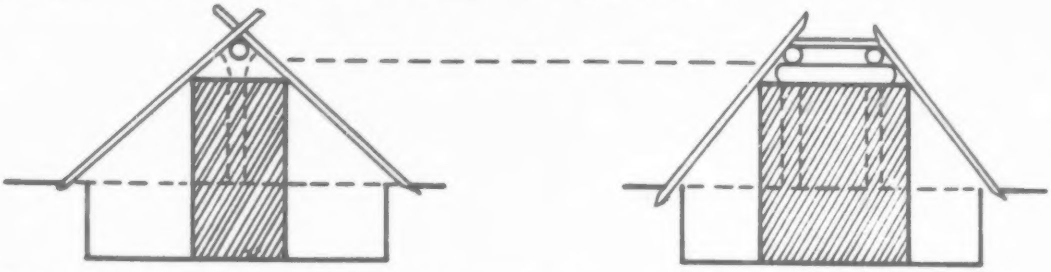


Figure 70: Cross section of comparably sized two- and four-post dug-outs. The shaded area indicates an area in which an adult could stand upright.

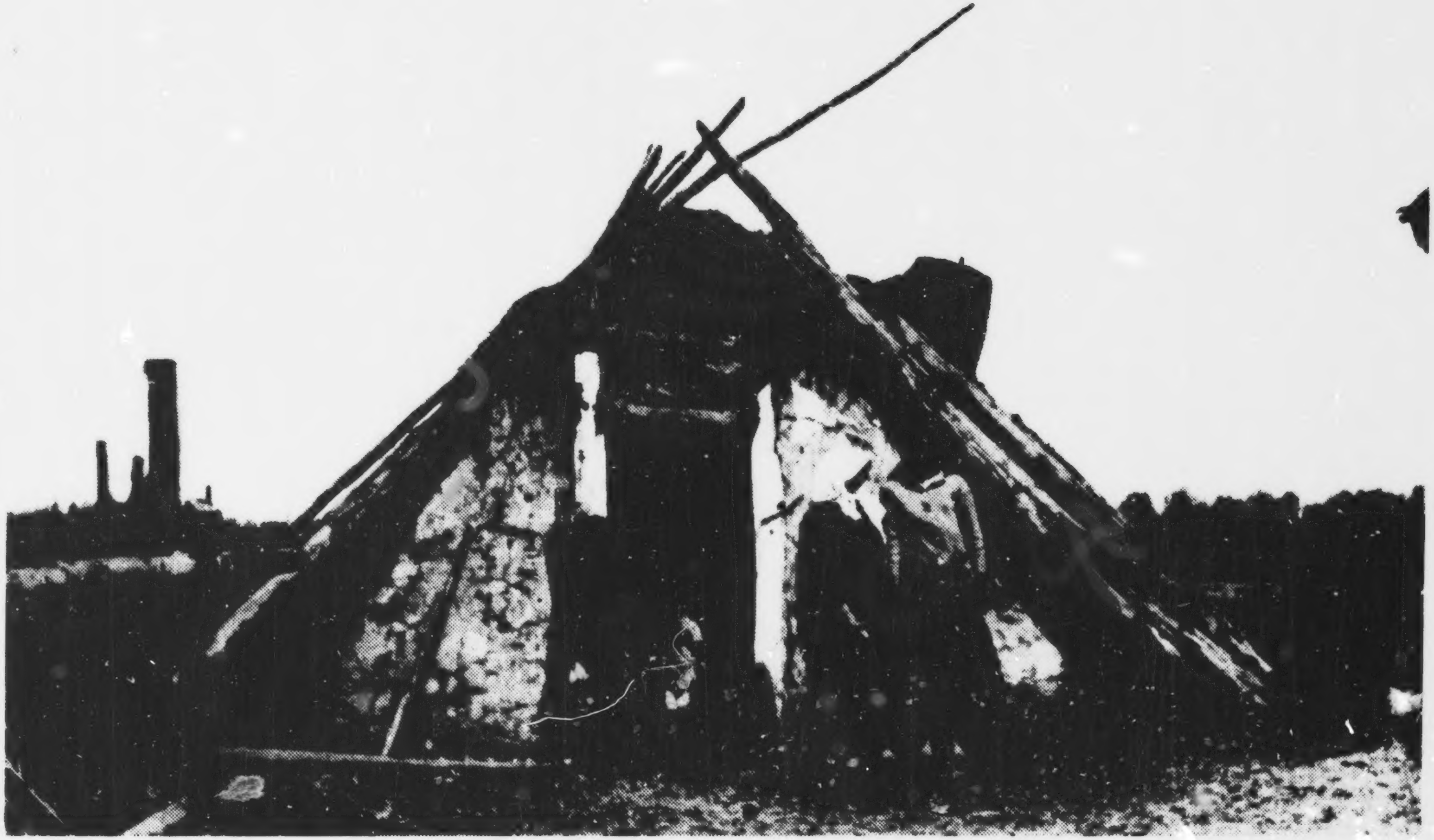


Figure 71: "Our First House." Slanted-roof dug-out with a four-post frame. (Printed in Alberta Department of Education: Annual Report, Edmonton, 1913.)

Two and four-post frames are also evident in ice-house construction, built by Ukrainian settlers in Alberta. Moreover, these structures were built and used more recently. Figures 33 and 34 show four-post and two-post types as found in the Yanishewsky and Kitz ice-houses respectively.

Where the burdei was built into a hill, the entrance faced downhill. The rear post would be correspondingly shorter, its height contingent on the grade of the hillside.[45] This is illustrated in Figure 60.

The Svarich buda represents another variant in structural type.[46] Contrary to all other recorded descriptions, the Svarich buda was not rectangular in shape. The facade, having a two-post door frame and a cross beam, was convex in shape, its walls receding back from the door. The structure was wider at the front than at the back. The informant was very precise in describing these features, and was able to draw the shape of the structure, although her description of the horizontal beam(s) and support post(s) in the rear were less clear.[47]

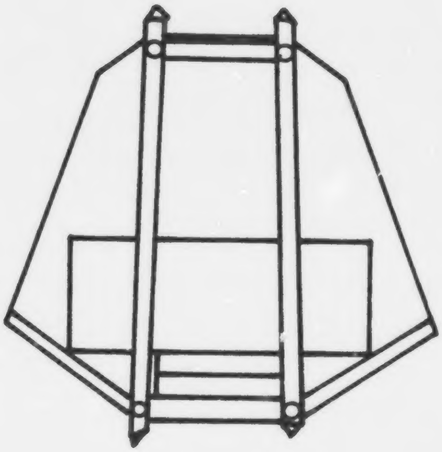


Figure 72: Concept drawing of the frame of the Svarich dug-out. The arrangement of beams and posts at the back of the structure is tentatively presented.

Nonrectangular structures can be found in other genres of Ukrainian folk architecture. For instance, A.H. Danyliuk describes grain storage and threshing buildings (kluni) in the region of Polissia, North-Western Ukraine:

> Multi-sided construction, with a floor plan approaching that of a circle, convincingly illustrates the archaic connection [of these kluni] to certain primitive structures, (possibly zemlianky or napivzemlianky with tent-like roofs).[48]

According to traditional construction techniques, wooden materials were generally selected for their straightness and evenness. Obviously, the quality of the materials affected the strength and durability of the structure. Bark was stripped off logs and poles so that insects did not infest the wood and, consequently, speed its decomposition.[49] These steps were sometimes taken when building temporary dug-out dwellings as well.[50] The door frame in Figure 71 shows shaved and squared wooden posts.

In most instances, however, the major concern in building the structure was time. The "finer points" of the construction process were often ignored. Logs and rails were left uneven and crooked. Wood was rarely debarked. The structures were seldom meant for extended use, and it would be several years before ants or termites could seriously damage the structure.

b) Rails

The most visible external feature of the principal type of dug-out was the roof consisting of two planes sloping to the ground. These planes were formed by leaning a row of rails against the frame on either one of its sides. In most cases, these rails were placed side by side and lined up from one end of the structure to the other.

These rails, or logs, were described using various terms driuchky, druky,[51] vorynnia,[52] zherdky,[53] krokvy,[54] as well as the less specific terms patyky (sticks), logy (logs) and derevo (wood).

Poplar was the most common material used for rails, although willows (lozy) were used in at least one case.[55] These rails were sometimes stripped of their bark and cleaned, but at other times, they were piled on hastily and haphazardly. The rails extended from the edge of the excavated pit to the top beam. In some cases, they were cut off at a certain height above the beam. In others, they appear to have been left to extend beyond the peak of the structure. This feature seems to be associated with the permanence and solidity of the structure. In structures built quickly and intended for temporary use, the rails were left at whatever length they were found. Since more time was spent on the larger more solid structures, details of this nature were more likely to be attended to.

The width of these rails or logs varied according to the size of the structure and also according to the weight of the materials to be piled onto it. Figure 74, in which the rails are left uncovered, shows a variety of widths and lengths of poplar leaning against the structure. In the case of the Archiniuk burdei, the rails (driuchky) are described as approximately ten cm in diameter; the width of modern fence posts.[56] These rails supported layers of grass, sods and dirt, as thick as thirty cm and often more, across a horizontal span up to two meters on each side. In other cases where the roofing material was thicker or the span longer, the diameter of the angled rails increased accordingly. This was probably the case in the Herasym, S. Shandro, and the P. Tkachuk dug-outs. Where the material was readily available, thicker logs were also used in constructing smaller burdei such as the Dmyterko and Zabrick cases.[57] Note the size of the logs used in the Yankowsky ice-house photo, Figure 34.

Four-post structures included a third plane of rails cut shorter and assembled horizontally between the two beams. Rails generally were leaned against the central beam and held in place by gravity and the weight of roofing material above them.[58] Occasionally the settlers had nails and could fasten key branches in place with these. In other cases, young branches (lizhchi) were woven and twisted together to form a rope-like pereveslo. The logs would be bound with this pereveslo. When it dried, the wooden "rope" shrank slightly and held strongly.[59]

5. Gable Walls

In scholarly and other published works in Ukrainian, a gable is referred to as a prychilka.[60] Few informants offered a specific term or description of these walls. One informant used the term fasiad in reference to both the front and the rear walls.[61]

These two walls in the principal type of dug-out dwelling were generally formed from a row of upright rails, similar to those on the roof planes. Space was left for the entrance, and sometimes for one or more windows. This is well illustrated in the exposed rails in Figure 74. In some instances these rails were not specifically fastened to the structure, but leaned slightly into it. In other cases they were held in place by the layer of sod strips piled against them.[62]

In at least one case where sod was not used, these rails were fastened with two additional rails laid horizontally over the others.[63] One rail (driuchok) was laid against the base of the structure, extending from one end of the roof to the other. It was secured in place to keep all the other rails from sliding outwards. A second, shorter rail was fastened horizontally to this wall at a higher level. It pinned the vertical rails between itself and the angular rails of the roof, thus securing them in place.

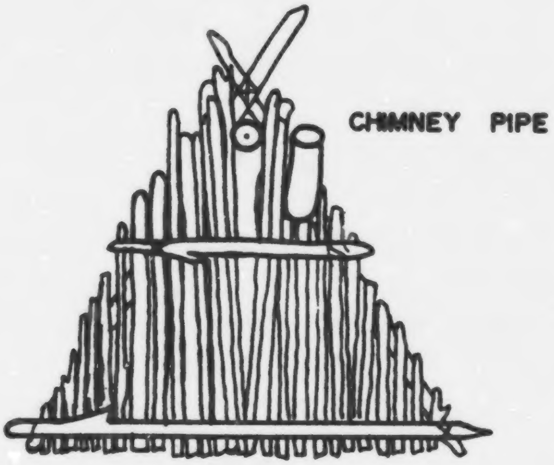


Figure 73: Concept drawing of the rear gable of the Lazhovsky buda.

The facade of the structure in Figure 71 is shown very clearly in the photograph. It illustrates other methods and materials with which the gable end of the structure may have been covered. Vertical rails were used in the facade of this structure as well, although they were spaced at intervals and ceased to function as the primary material. Thin, pliable twigs were woven horizontally through these rails and stacked thickly to form the wall. This method of construction was known in Ukrainian folk architecture.[64] This wall was further covered with a layer of clay or plaster. The plaster adhered to the irregular surface of the small branches. The gable wall on the left side Figure 58 also suggests a plastered surface.

6. Roofing materials

Temporary shelters were sometimes constructed so that the only covering material was the wooden framework. Such a shelter was photographed in Figure 74. It is likely that this type of shelter was not used for a long period of time in this form. Conceivably, another shelter was built to replace this one, or the roof of this structure was improved. Rails would be piled more thickly and included smaller branches and twigs. The foliage and vegetation helped prevent water from entering the shelter, however it is doubtful that such dwellings could withstand even a moderate rain.

In most cases, the wooden frame was covered with a series of other materials. Plaster, grass, sod, earth, live vegetation, clay, additional wood, and possibly other materials were used in these combinations in various instances.

a) Plastered Rails

Some of these structures included a layer of plaster adhered to the wooden frame. The plaster was made of clay mixed with water and chopped grass or straw. The clay was usually taken fromt the excavated

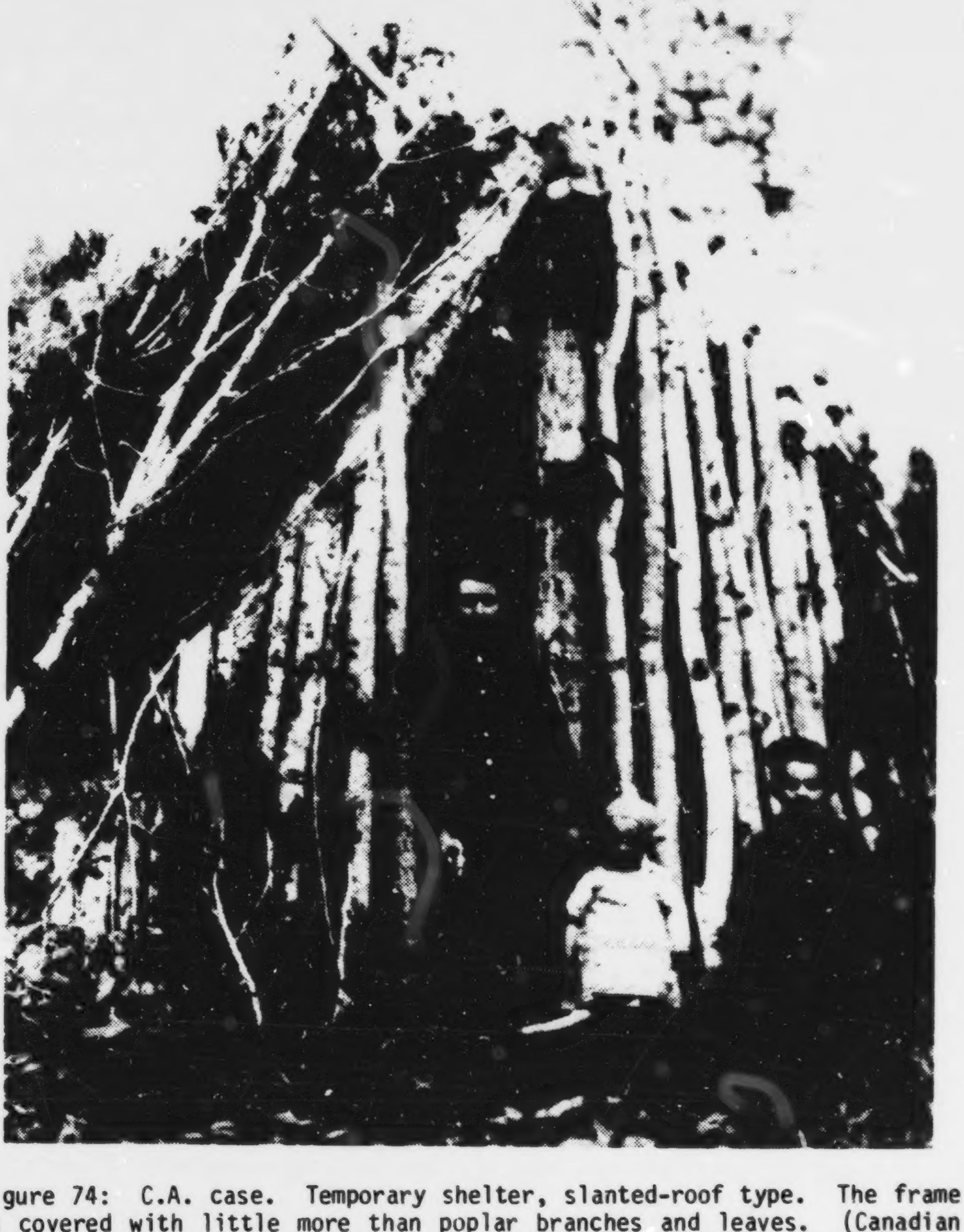


Figure 74: C.A. case. Temporary shelter, slanted-roof type. The frame is covered with little more than poplar branches and leaves. (Canadian Archives photograph, printed in Burke, The Ukrainian Canadians, p. 18.)

Table 19: Principal Type
Gable Walls, Roof Materials

	gables - rails	gables - sod	gables - woven brush	gables - plaster	rails on roof	plastered rails	- top	- bottom	grass, hay	sod	earth	exterior clay	growing vegetation	exterior wood	other materials	separate ceiling
Archiniuk					x	x			x	x	x		x			?
Bar-V-nok					x									p		
Berisina(?S)		p		x	x					x						
Bordian					x											
C.A.	x				x											
Chmilar					x					x						
Dmyterko					x						x		x		x	
Educ. Report			x	x	x				p	p	p			x		
Eurchuk (S)					x											
Harasewich					p											
Hawreliak	p				x					p	p					
Hilkow					x											
Jubilee book				x	p	x		x	x	x		p				x
Kurelek, 1					x					p			x			
Kurelek, 2					x					p			x			
Kurelek, 3					x					p			?			
Lazhovsky	x				x				x							
Lepatsky					x	x	x	x		x		x				
Malayko					p				x		x					
Natchuk					x					x			x			
Osinchuk					x				x	x						
Ruptash					x				x		x	?	x			
Sachkiw					x					x						
Shandro, N.					x						x		x			
Shandro, S.					x											
Shemko					x	x	x	x		x					x	
Socholotoski	p	x			x				x	x						
Svarich					x				x	x	x					
Svarich, 2					x					x						
Zabrick					x					x						
Zazula	x	x			x					x			x			

site itself,[65] or imported from another nearby source, such as a riverbank.[66]

The technique of plastering (lipyty, mastyty) was well developed in Ukrainian folk architecture. When plastering a building by this traditional means, a special mixing pit was usually dug near the site. This is illustrated in William Kurelek's painting, reproduced in Figure 51. The plaster ingredients were mixed, usually by foot, then applied by hand, where the clay and straw were worked into the surface of the walls and ceiling. The plaster was allowed to dry thoroughly, and was often applied in several coats, the last being the smoothest.

An account by Maria Eurchuk describes the process of plastering a burdei in 1903.[67] This work was done by the women, who used the excavation of the burdei itself as a mixing pit, digging it deeper to loosen the clay and adding the chopped hay.

> We're pasting the walls, but the hlyna won't stick and falls off. How much we toiled before we covered the walls with this hlyna mixed with hay! It was even harder with the ceiling, because the poles had leaves to which the hlyna would not stick. My sister made a torch of dry grass, lit it, singed the leaves and only then would the hlyna stick to the poles.[68]

In areas where the plaster was applied to the top surface of the rails, adhesion was not as much of a problem.

In some cases, the plaster was applied to the inside of the rails once the other roofing materials were in place. At other times, the frame was plastered during the actual construction process itself. The first instance, where the plaster was applied to the inside of the rails is illustrated in the Archiniuk, Herasym and Eurchuk examples. In these instances, especially when a separate ceiling had been built, the plastering may be considered as a finishing material as well as in terms of being a structural component of the roof. In the second instance, it was generally applied to the interior and exterior surfaces of the rails. This was done in the Lepatsky and Shemko structures.[69] In both cases where the roof was plastered from the top and bottom, the informants made a point of commenting on the ability of the structure to withstand rain. In the Shemko case, the family had originally lived in a tent, until they were told by a government agent to build a dug-out for the winter. Upon his recommendation, they built a structural frame of the principal type, and covered that with sod strips. When this structure proved unable to repel rain and animals, it was disassembled, and the frame was coated inside and out with a layer of plaster. The sod was then replaced on the roof. From this point on, the shelter became watertight.[70]

Plaster prevented water, dirt, mud, and lumps of sod from entering the structure. In addition, the airtight plaster layer reduced the chances of animals, mosquitoes and other insects entering the dug-out. It also insulated the structure from wind and cold.

b) Grass and Other Vegetation

A layer of grass, straw, or other vegetation was often spread over the roof frame of these dug-outs.

In the summer, prairie grass was readily accessable. It was cut (skosene) with a scythe (kosa), or by hand from a grassy area nearby. The grass on the virgin prairie often grew tall. Slough grass (velyka osoka), or rushes were used in other cases.[71] In one description, where the structure was built very early in the spring, dried grass (sternyk) from the previous summer was recovered from under the snow and used in the structure.[72]

The vegetation was usually spread in a layer one inch thick or more,[73] or sometimes bound into sheaves, then laid onto the roof.[74] The sheaves in the Eurchuk description were so large that the women could not be seen behind them.

In one recorded instance, where the dug-out was used only for a few months in the summer, the thick covering of dry grass was considered sufficient, and no other roofing materials were used.[75] The grass (sternyk) was bundled and secured to the rails. Poles and rails laid over the sternyk may also have helped to prevent the wind from blowing it away.[76]

In most cases, however, the primary function of the layer of vegetation on the dug-out was to provide a more solid and impenetrable support for the sod or earth which was to be placed above it. Grass would keep the settling dirt from crumbling into the spaces between the rails and falling into the dwelling. Evidently, this device was used quite frequently, although some builders considered it unnecessary.[77]

c) Sod

The most common material used in roofing these dug-out shelters was sod (*derniugy*, *zerniugy*, *kytsky*, *kitsky*). The term *hlyna*, normally referring to clay or plaster, was also used in reference to sod.[78]

Sod (*deren*) had been used in Ukraine for several architectural purposes for centuries. It has been employed in dike (*hrebli*) reinforcement, as well as for roofing various structures, such as the dwellings in Cossack settlements (*Sich*),[79] and the *zemlianky* built by Russian armies in the nineteenth century.[80] These dwellings are discussed in Chapter I above.

Sod for *burdei* in Alberta was procured from the prairie (*preri*) itself. It consisted of the stems and roots of grasses that were thickly entangled in the top layer of soil. In some instances, the sod was cut with a walking plow, but very often it was simply uprooted with a spade (ruskal).[81] The sod pieces varied in size. They were generally eight to twelve cm thick, and were cut into 20 cm squares,[82] or else into long, rectangular strips.[83] The strips were as long as was convenient for carrying.

The sod pieces were piled onto the structure one on top of the other. Certain descriptions portray the entire structure as being completely encased in sod, leaving only a vent for the chimney, the window, and the entrance.[84] Others indicate that the lower areas of the structure were mounded with dirt, and sod covered only the upper surfaces of the roof.[85]

Sod pieces were piled one on top of the other so as to be maximally water repellant. Extra care also taken to ensure they would not slide down or fall away from the structure. On vertical walls, the pieces were piled like bricks, but the problem became more complex on the angular planes of the roof. One informant described the desirabilty of retaining the horizontal orientation of each piece, as reconstructed in Figure 75 a) below.[86] If sod layers were angled into the structure, as in Figure 75 b), then water could penetrate between the layers and seep into the roof. On the other hand, if the pieces angled away from the structure, as in Figure 75 c) the sod pieces themselves, tended to slide down the wall.

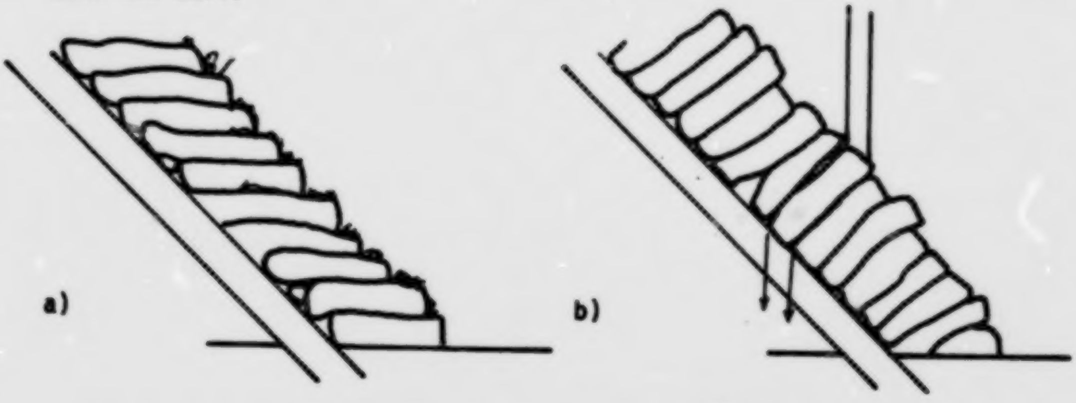


Figure 75: a) Preferred sod layering technique as described by Mr. Wasyl Zazula. Each piece remains horizontal. b) Incorrect sod-layering technique, sod strips leaning to the slanted wall allow the rain to leak into the structure.

The technique of placing sod strips horizontally onto an angled roof surface is also described in Welsch's Sod Walls.[87] Welsch also describes a second roofing technique where the sod pieces are placed parallel to the roof surface, and packed in tightly. This method is suggested in Ukrainian dug-out structures by Figures 59 and 60.

The use of several layers of sod was described by informants.[88] Mr. William Zabrick described a technique in which the first layer of sod was laid grass side down, and the second layer grass side up. The grass of the first layer functioned very similarly to the layer of vegetation described above. It prevented lumps of dirt and mud from dropping

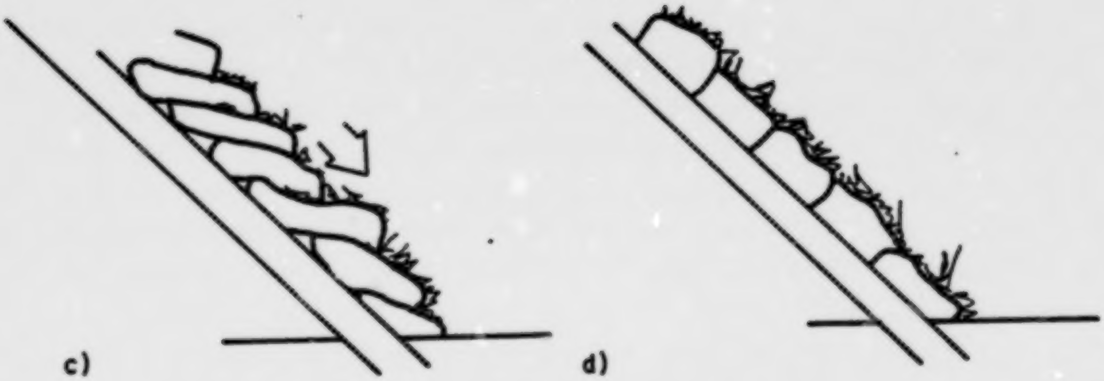


Figure 75 continued: c) Incorrect sod-layering technique. Sod strips leaning away from the structure tend to slide off down the wall. d) Alternate correct method wherein sod strips are placed tightly next to each other to redirect water.

through the rails into the structure. The second layer of sod was laid grass side up to protect the soil from wind and rain. The laying of sod pieces grass side down was described by other informants as well.[89]

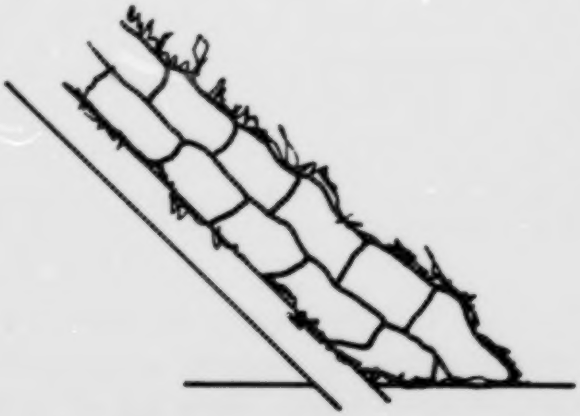


Figure 76: Zabrick technique of laying sod. First layer is placed grass-side down, second layer, grass-side up.

d) Earth

It was not uncommon to pile earth that had been excavated from the

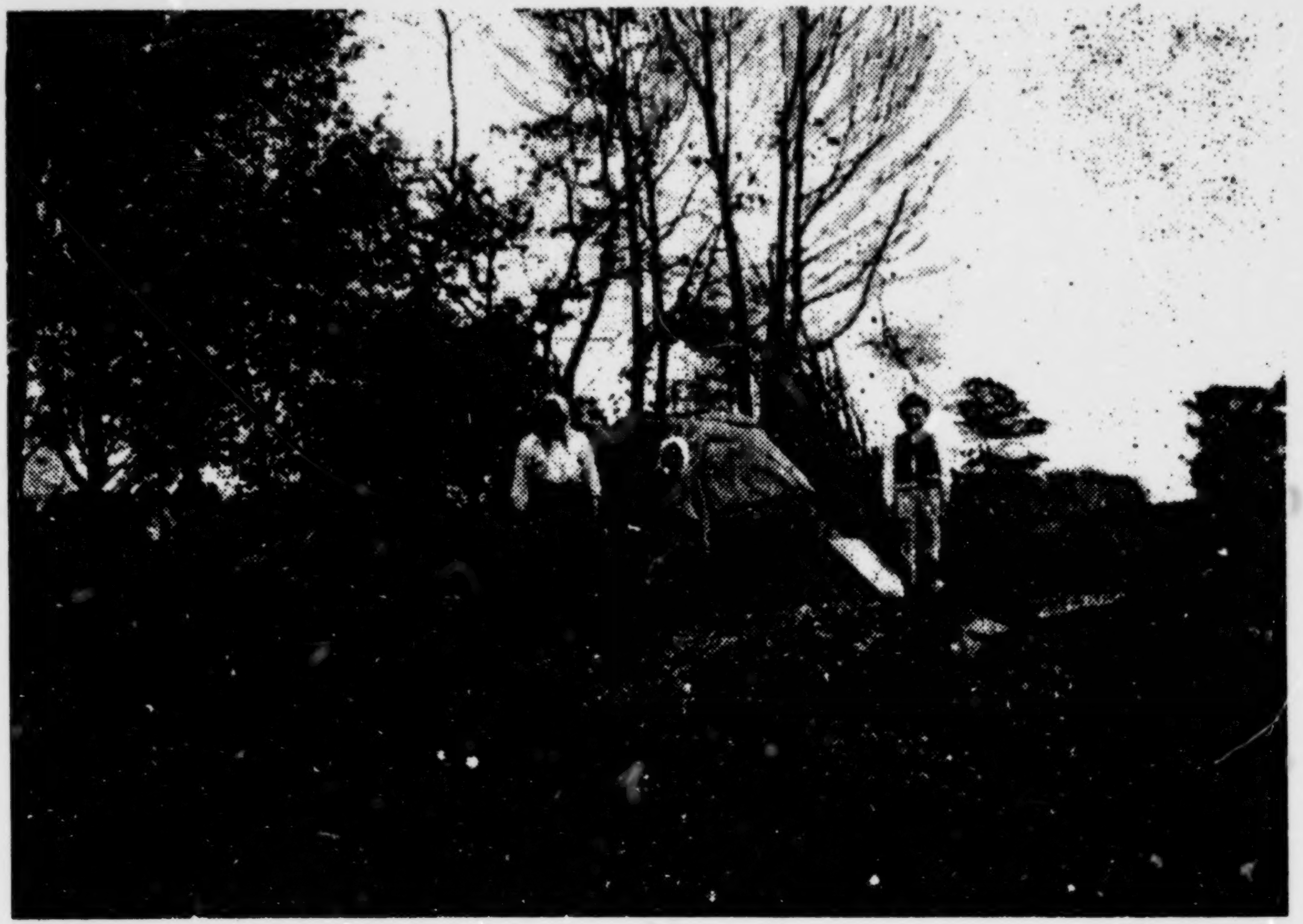


Figure 77: "The first structure on a farm in Canada." The structure appears to be a four-post slanted-roof dug-out. The exterior is coated with clay. (Printed in a Jubilee book.)

pit back onto the frame of the structure. It is possible that, in some cases, the rails of the frame were mounded directly with earth. However, at least on the upper areas the earth was generally piled over the intermediary layers of grass[90] and/or sod.[91] Where the earth had a high clay content it was smoothed and packed to form a hard surface upon drying, as is apparent in Figure 77.

e) Growing Vegetation

As an alternative to the dug-out having a packed clay surface, the roofs of many dug-out structures seem to have been left unattended. If the structure was covered with sod, grass-side up, it was left to grow naturally. In time, grass would grow on the raw earth mounded around the edges or over the entire structure. The Dmyterko dug-out, occupied for many years, was described by an informant as having resembled "a porcupine." Weeds grew as high as three feet on the mound.[92]

f) Exterior Wood

Illustrations of dug-out shelters frequently reveal poles and beams set against the roof.[93] The infrequency of their mention in oral descriptions, however, suggests that these were not considered a structural component of the shelter in the normal sense. Poles were likely placed incidentally, and temporarily, as much to store the pole as to protect the roof. The evident structural value of these exterior poles was to hold other roof materials in place, thus protecting them from wind and rain. Poles serving similar functions were used in other genres of folk architecture, especially in the construction of thatched roofs.[94]

g) Other Materials

Other materials have also been identified in connection with the structure of the burdei. The Shemko dug-out is described as being "covered with moss and sod."[95] Personal interviews with informants neither confirm nor deny the use of moss.[96] Moss (mokh) has been used widely both as a packing and insulating material in other genres of folk architecture in Ukraine.[97]

Snow also served a valuable purpose in the winter months. When it lay heavily over the structure, it helped insulate it.[98]

Cardboard, newspaper, and plywood materials visible in the photographs of the Dmyterko dug-out reflect its very recent inhabitation. Though the materials themselves are not traditional, they display a similar attitude toward materials in general which occurred with the earlier dug-outs. Materials were selected and used by each builder to maximize the warmth, comfort, safety, and durability of the structure, as well as to minimize the required work. Verifying this pragmatic attitude towards material selection, several other informants stated that building a burdei today would be much simpler and faster, due to the availability of lumber and plywood.[99]

7. Entrance

Entrances to slanted-roof structures were almost always located in a gable end. (This end is called the front of the structure throughout this work.) One exception to this rule appears in Figure 59. In this structure, a door is built into the gable of a second roof, built perpendicular to the main axis.

The main axis of these dwellings was often oriented in a north-south direction, the entrance facing south. With this orientation, the structure was more sheltered from the colder north winds.[100] Also, the sun's rays would shine into the structure at midday, when they would offer maximum warmth and illumination. This orientation is typical of Ukrainian and other folk architecture.[101] This tendency, however, may have been disrupted by the orientation of an otherwise suitable hill[102] or the context of the structure itself. In Figure 59, one structure is built perpendicular to another so that they can share the flat area immediately in front of each structure.[103]

In certain instances, doorways were shorter than those of more conventional dwellings, and required that the occupants stoop to enter.[104] This is suggested by Figure 77. A smaller door would be simpler to build, especially if the structure was deeply excavated. This feature would also minimize the insulation problem associated with the door.

The doorjambs in a three-post and four-post structure were formed by the two front supporting posts. This is illustrated in Figure 71. In two-post structures, the central post served as one jamb, and the door was built to one or the other side. The remainder of the doorframe was constructed of specially fastened vertical and horizontal rails.[105]

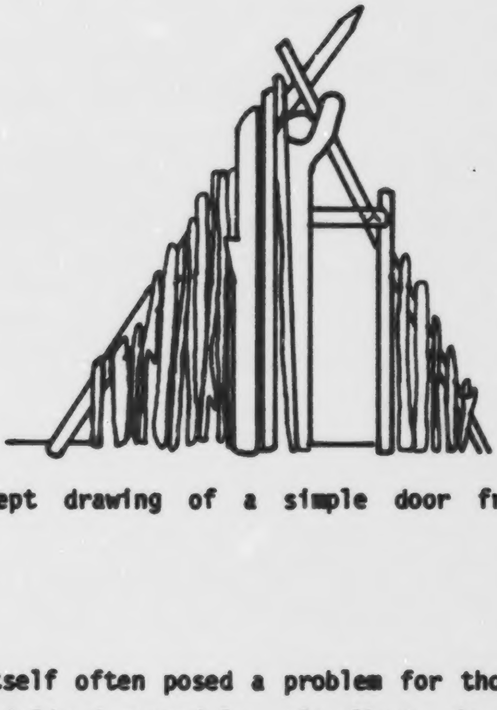


Figure 78: Concept drawing of a simple door frame in a two-post structure.

a) Door

The door itself often posed a problem for those settlers who had no access to specialized materials. At first, it is likely that the entrance frame was simply left as an open hole.[106] Such an arrangement is suggested in Figure 74 and 77. An immediate solution, if available, was sometimes found in hanging a woven blanket (blenket, vereta, prosterylo) over the door frame, at least until a more permanent door could be acquired or built.[107]

One method of door construction involved the construction of a gate-like frame. Two posts were selected for the vertical members of the door. Holes were drilled into them at regular, short intervals and shorter perpendicular rails were inserted into the holes of each post. This door type is illustrated in the center of Figure 59 and in Figure 74. A precedent from a Ukrainian settlement is found in the illustration of a barn door, Figure 80. The framework was either attached to the main jamb in this form, or it may have been covered with a coat of mud and long grasses, enclosing the spaces between the bars.[108] Only in this last instance would the door function in terms of insulation, shelter from draft or as an insect screen.

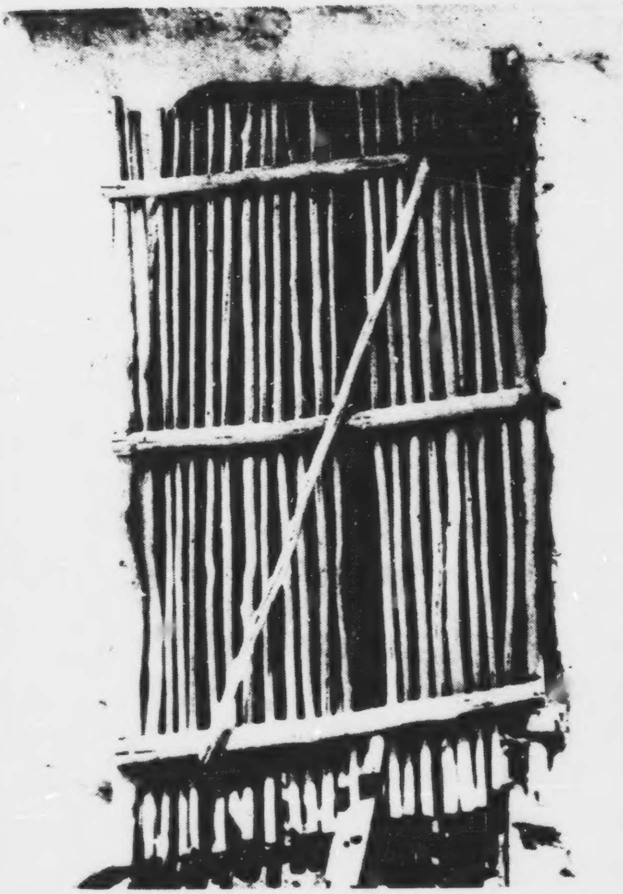
Figures 58, 71 and 80 illustrate this type of door built only half-size, screening the lower half of the doorway. This door was difficult to construct with the tools at hand, and the necessary labour was significantly decreased when the door was shorter. In this form, the door served primarily to prevent wild or domestic animals from entering the dwelling space. This function was served regardless of the door standing full or only half height. Figure 58 seems to illustrate this door type in combination with blankets, which are drawn to the sides of the doorway. The combination of blanket and rail type door offered more versatility in function. Air and light were allowed into the dwelling in the day, when the blankets were drawn aside, and the cold and insects could be kept out at night, when the blanket covers were lowered.

A second type of door construction involved weaving a frame of rails with willow branches.[109] Doors fashioned of split rails have also been attested.[110] This type of door is also attested in a Ukrainian ethnographic area as a barn door, Figure 79.

Table 20: Principal Type

Entrance Location, Door, Entranceway

	hillside	flat area	door off center	door centered	door in gable	door not in gable	door facing south	other orientation	subsized door	empty entranceway	blanket	horizontal rails	vertical rails	woven twigs	boards	window in door	improvised hinges	bought hinges	lock on door	pit depth 0 - .74m	pit depth .74 - 2.00m	interior steps	exterior steps	entranceway
Archiniuk		x	x		x			?							?									
Bar-V-nok		p		x	x																			
Berisina(?S)		x	?	x	x	x	x	x	x		x	x			x			x			x	x		x
Bordian	x																							
C.A.		x	x		x															x				
Chmilar																								
Dmyterko			p		p		x								x			p			x	x		x
Educ. Report		x		x	x		p								x					?				
Eurchuk (S)				?	p							x					x				x	?		x
Harasewich		?																		p	p			
Hawreliak			p																	x				
Hilkow																				x				
Jubilee book				x	p		?		p	p											?			
Kurelek, 1		x					p														?	p		
Kurelek, 2		x					p								x							x		
Kurelek, 3		x																		?		x		
Lazhovsky		x	x		x						x									x				
Lepatsky	x																							
Malayko																					x			
Natchuk	x				p								x			?								
Osinchuk			x																		x			
Ruptash	?	?	x		x			p												x				
Sachkiw					p																x			
Shandro, N.		x			x					x					x					p				
Shandro, S.		x			x			?												p				
Shemko	x				x			?												x				
Socholotoski	x				p																x		p	
Svarich	x				x		x													x		x		
Svarich, 2											x				x						x			
Zabrick		x	p																	x	?			
Zazula		x	?							x					x			x		x	?	x		x



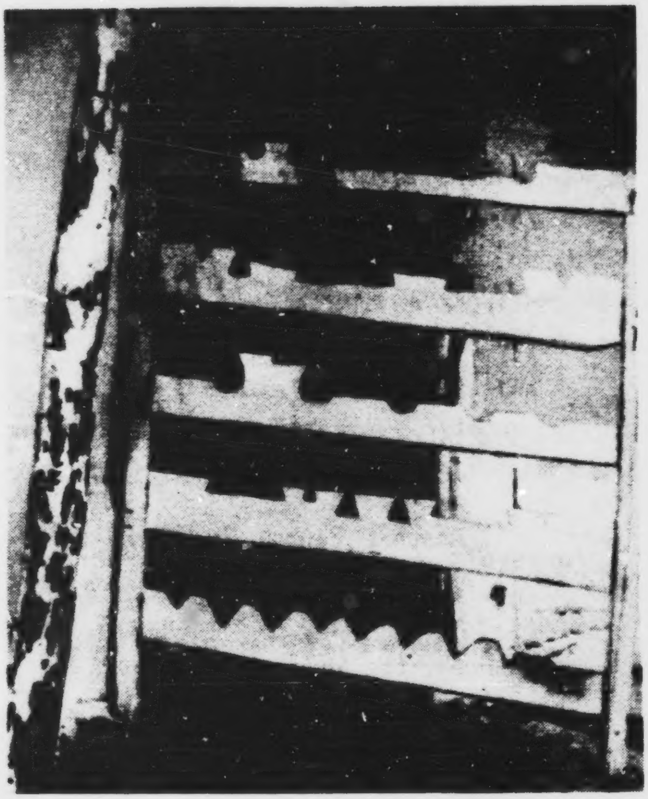


Figure 79: Door of vertical rails. Photograph from a barn in the village of Rivne, now in Czechoslovakia. Note the hinge mechanisms. (Printed in Sopolyha, Narodna, photograph 35.)

Figure 80: A gate (firtka) to a barn in the village of Hutka. The horizontal nail structure is also found in Figures 58 and 71. (Printed in Sopolyha, Narodna, photograph 45.)

Figure 81: Door of planks with a wooden latch from the village of Vyshnii Myroshiv. (Printed in Sopolyha, Narodna, photograph 55.)

Another common, and possibly more satisfactory type of door was built of two or more wide boards or slabs (shlebsy). These doors, when made or acquired, replaced the earlier, temporary types.[111] In some instances, the boards were shaved and planed (obtesani) from trees by the builder of the dug-out himself. In other cases, they were bought and transported from a sawmill (trachka). Sawmills began to appear more frequently in east-central Alberta around the turn of the century.[112] These wooden doors were fitted with a small window in some cases.[113]

The doors were attached to the doorjamb by means of metal hinges bought at a store[114] or by means of improvised wooden or leather hinges (zavisy). Maria Eurchuk describes the "hinges" in her family's burdei as being made from a kind of rope (vuzhivka) of intertwined birch branches, twisted and tied to the post.[115]

The various fragile, temporary and partial doors were not built to lock out human beings. Aside from insulation, informants confirmed that the prime concern was to prevent badgers, skunks and bears from entering the burdei.[116] In at least one case, the door was equipped with a handmade wooden lock, designed to impede bears, rather than humans.[117]

b) Steps

The depth of the interior floor of some of the structures necessitated the excavation or construction of a staircase or ladder of some kind. In most cases, this staircase consisted simply of a series of platforms carved into the earth. No Alberta informant has indicated any type of reinforcement of these individual landings, though the practice of placing a flat stone on each step is documented in Ukrainian folk architecture.[118]

When dug into the raw earth, each step was approximately forty five cm deep or more.[119] The size and depth of each landing depended largely on the texture and density of the soil. Special care had to be taken in sandy soil so that the platforms would not erode into an angular ramp.[120]

A series of steps excavated in a similar context are illustrated in the diagram of a zemlianka in the 1897 Entsyklopedicheskii slovar, Figure 17. The angle of the inclines was designed to maximally reinforce the landings.

In Alberta, stairs were carved into the soil with a shovel (ruskal).[121] They were frequently located on the interior of the structure, protecting the steps from rain. This design, however, did encroach upon the interior space of the structure. Especially with deep excavations, an interior staircase was structurally weak, tending to crumble forward and over the unsupported sides. In deeper dug-outs, the stairway was more likely dug into the earth on the outside of the main pit, where the walls of untouched earth could support it from three sides. Such an arrangement, covered from the elements with a separate roof, is found in Alberta in the Dmyterko case, Figure 44, and in Ukraine in the photograph of the zemlianky of miners in the Donbas region at the turn of this century, Figure 15.

c) Entranceway

The entire interior area of a one-roomed structure was exposed directly to the elements each time the door was opened. This must have represented a significant heat loss in sub-zero weather. The development of two-roomed structures represented a significant improvement in the design of the burdei. Three different developments of separate entranceways have been recorded during fieldwork.

Figure 59 illustrates a secondary roof constructed perpendicular to the main body of the structure. This dug-out clearly features two entranceways. The illustration does not indicate the structural components of this addition (the means by which the beam and rails intersected the roof). The beam on the secondary axis appears lower than the main beam. The additional construction helped shelter the interior from direct exposure.

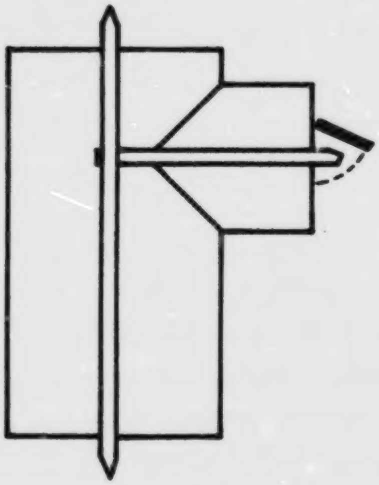


Figure 82: concept drawing of the Berisina entranceway from Figure 59. Plan of the dug-out.

A second type of entranceway also involved the construction of an extension to the main interior space. The Dmyterko dug-out, built 1930, featured an entranceway extending from the gable end of the structure. The southern orientation and location in the gable is similar to that most commonly found in the temporary shelters of the Ukrainians. The interior of the dug-out was approximately a meter deep and stairs were cut into the soil exterior to the main living space. Vertical walls and a flat roof were built over the external stairway to enclose this small area. These walls were constructed of poplar poles and lumber, insulated with cardboard, newspapers and other materials.

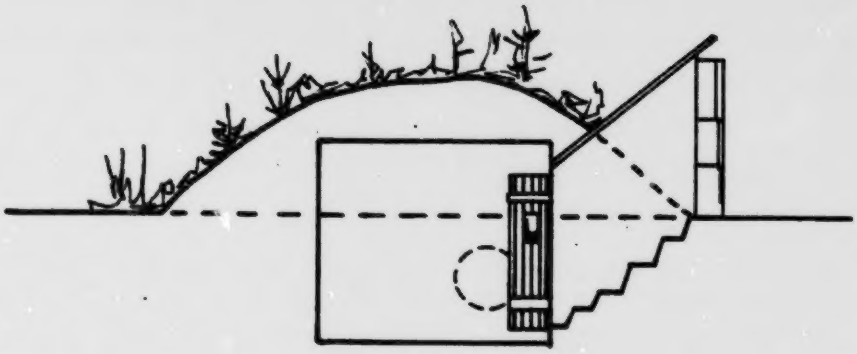


Figure 83: Concept drawing of the Dmyterko entranceway. Profile.

A door made of boards enclosed this area at the bottom end, hinged on the west side and opening into the main area. A second door was mounted on a frame at the top of the entranceway, hinged on the east jamb and opening outwards. Each door was equipped with a window, approximately fifteen cm square.[122] Photographs taken in 1962 show that no window existed in the outside door at that time.

A third type of entranceway involved the subdivision of the main space itself. A wall and second door were built parallel to the front facade.[123] The entrance area, (siny, khoromy) was approximately one and one half meters long and as wide as the structure itself. The structure could be entered by opening one door at a time. In this way, the interior area was never directly exposed to the climatic conditions outside.

In the Zazula description, this wall was built after the construction of the roof, and did not participate in weight bearing. In other cases, a post in the interior wall helped support the weight of the roof and shorten the span of the main beam. The construction and

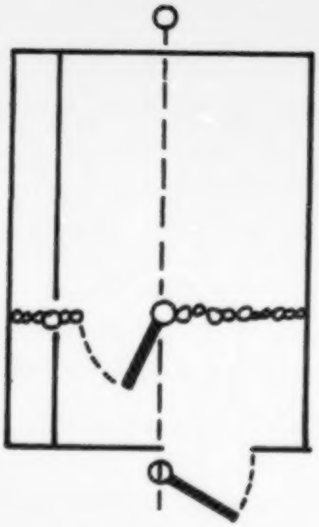


Figure 84: Concept drawing of the Zazula entranceway. Plan.

surfacing of the interior wall likely related to the materials used on the other elements of the structure. Other features and the uses of this area are discussed below under the heading of Two-Room Structures.

The discussion of nineteenth century miners' dwellings in Chapter I includes another example of a separate entranceway. The zemlianky illustrated in Figure 15 were entered from the side, perpendicular to the main axis. Entrances were also built into the gable ends. The constructed entranceway angled down noticeably, descending towards the interior floor below. The frames of these particular entrance constructions featured vertical walls and a two-planed roof.[124]

8. Windows

Windows were desireable in the temporary structures to light the interior of the living space as well as to provide ventilation at times. The majority of these dwellings were equipped with one or two windows, though some of the more temporary or primitive structures had none.[125] This seems to be the case in Figure 77.

In most cases, especially if the structure was occupied for an extended period, the windows contained glass panes, transported carefully with the immigrants from their homeland[126] or more often bought in Alberta.[127] Single pane windows were commonly used at first. If the zemlianka was used for a long period of time, it was often possible to replace the first pane with a larger or multipane window.[128]

In some cases, if glass was unavailable for lack of time or money, window openings were simply left open as holes, or covered with a piece of cloth.[129] A cloth covering was translucent while keeping some of the wind and insects out. However, it was not of much use in the rain.

No wooden frame was necessary if a window opening was empty. A hole would be framed by the adjacent sod, earth and sticks.[130] A more concrete frame was necessary to hold a stretched cloth in place. Larger and more elaborate windows were framed with carefully carved wooden pieces or with boards acquired for the purpose.[131]

The location of windows in the structures varied. They were commonly built into back gable walls.[132] In the case of two or three-post frames, a rear window would necessarily be located to one side of the supporting post. The sod and/or vertical rails of such a gable could easily be arranged to accommodate an opening for the window. Hillside structures could also accommodate a rear window. This was further simplified if the earthern slope reached as high as the window sill in the back.[133]

The rear window location, however, is problematic in terms of orientation. The tendency to build the structures so that the entrance faced south has been discussed in the preceding section. A rear window in such a case would then face north. The disadvantages of a northern window in a burdei are similar to those in other genres of folk architecture. Direct sunlight never strikes the north wall, and the poorly insulating glass surface would be exposed directly to the cold winds.

Table 21: Principal Type

Windows, Stove, Ventilation

	number of windows	window in door	in facade	in rear gable	- north	other location	glass	one pane	multi-pane	stove = hole	crude stove + plate	clay shparhat	pich	metal stove	shparhat + pich	centered stove	rear stove	front stove	open fire	woven chimney	metal pipe	pipe + clay	pipe vents roof	pipe vents gable
Archiniuk	1			x	?		x					x	x		x		x					x	x	
Bar-V-nok																								
Berisina(?S)	2			?	?		x						x											
Bordian																								
C.A.	0										?					?								
Chmilar																								
Dmyterko	3	x				x	x	x						x				x			x		x	
Educ. Report	4?		x				p		p								x			?			x	
Eurchuk (S)	2		p	p	?		x	x					x											
Harasewich																								
Hawreliak																								
Hilkow											x					p			p					
Jubilee book																	?							
Kurelek, 1																								
Kurelek, 2																								
Kurelek, 3	6		x				x		x															
Lazhovsky	0									x						x					x			x
Lepatsky												x												
Malayko																								
Natchuk	1											x												
Osinchuk	2		x	x	?		x	x				p								x			p	
Ruptash	1			x	?		x	x																
Sachkiw												x								x				
Shandro, N.	1			x	?		p										p							
Shandro, S.											x						x				?		x	
Shemko	1			x	?		±													?	?			
Socholotoski																								
Svarich	2		x				x	x	x					x				x			p		x	
Svarich, 2	1						x				x			x				x			p		x	
Zabrick											x													
Zazula	1						±	x	x		x						x				x		x	

In one case a window was located within the plane of the roof itself.[134]

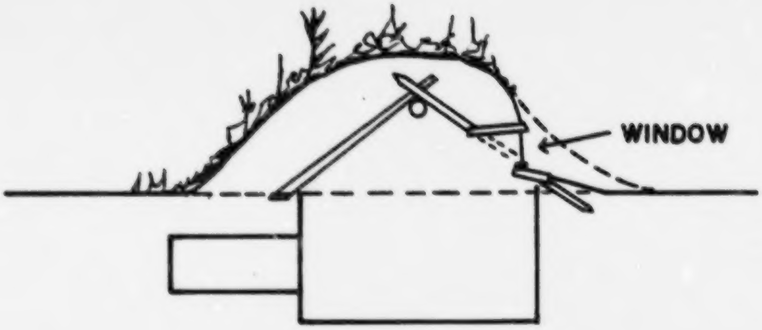


Figure 85: Concept drawing of the east window of the Dmyterko structure. One possible solution for a window in the slanted-roof.

This window faced east. Smaller windows in the doors of this structure faced south. In combination, the windows of this structure were placed to maximize benefit from the angle of the sun's rays in the morning and afternoon.

In other cases windows were located in the front facade, either above the door as in the Kurelek painting, Figure 49, or at the lower sides of this wall,[135] as illustrated below.

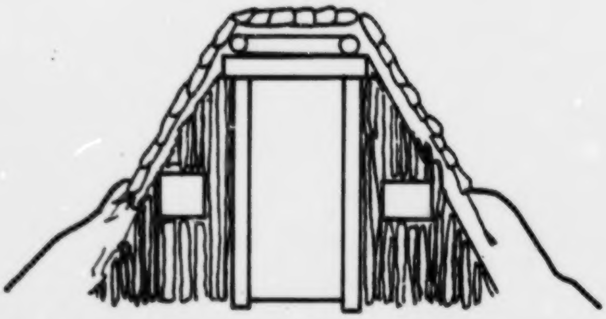


Figure 86: Reconstructed facade of the Svarich dug-out illustrating location of windows.

This arrangement created no conflict in orientation, and the structures faced south in most instances.

9. Heating and Cooking

One of the primary functions of the temporary shelter was protection from the cold. In most instances of shelters such as these, the cooking facilities coincided with those used for heating.

One primitive form of cooking facility was comprised simply of a metal plate (bliekha) laid over a hole in the floor. A fire (vohon) was kindled in the hole, heating the metal cooking surface. The bliekha was equipped with a hole into which a chimney pipe was inserted.[136]

In other structures the "stove" was slightly more advanced. Two or three short walls of clay were built and a metal plate (bliekha) was placed onto them. A fire was kindled in the semi-sheltered area directly under the plate.[137]

The "stove" in most dwellings, however, was more sophisticated, and the fire was enclosed. The stove was built taller in many instances and was equipped with a hinged metal door. This type of stove was called a shparhat or a kukhnia. The body of a shparhat was generally made of clay and chopped grass, much the same as the plaster used in the walls. The structure became stronger with use, as the fire continued to harden the clay.

The metal plate (bliekha) used for the stove top was either brought from the old country,[138] bought,[139] or acquired in some other way by the immigrant. It was not difficult to find such metal plates even in the earliest years of Ukrainian immigration to Alberta.[140] A bliekha, however, may not have been intended as a stove top, and therefore its shape, thickness, size, quality and composition varied. In other cases, the metal plates were designed specifically for this purpose and had two or four burner plates built into the surface.

Figure 87: Chimney woven of twigs around a column of poles. The top of this chimney is wrapped in metal to reduce the fire hazard. Apparently, the chimney is plastered only from the inside. (Printed in Sopolyha, Narodna, photograph 37.)

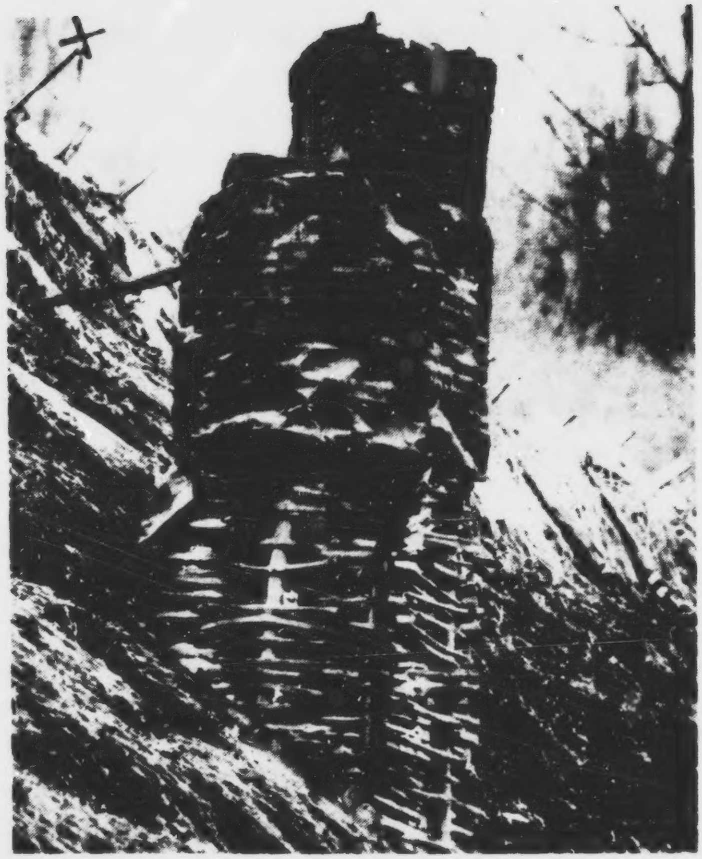


Figure 88: The shparhat in the Shandro Ukrainian Museum replica of a burdei. (Photograph taken in 1983 by Andriy Nahachewsky.)

A more elaborate and larger cooking and heating facility consisted of a clay oven, (pich or piets). This structure was sometimes built in addition to the shparhat,[141] creating a more elaborate kitchen layout which allowed for cooking, frying and baking. In other cases, the pich existed alone. No metal plate was required. The oven was a traditional means of food preparation, and was sufficient for a seasoned cook.

Aside from its use as a food preparation facility, the large clay mass of the pich stored a great deal of heat. After preparing several meals in it, it remained warm for hours. It was common practice to build the pich with a large flat surface on top, where children or adults would sleep.[142]

Metal stoves, usually bought in Edmonton, were affirmed in several cases.[143] The terms shparhat and kukhnia were also used for these stoves, as well as the term (hiter) from the English "heater".[144] In one case, it was suggested that the family may have acquired and used such a heater with their tent. (A tent equipped with a heater is illustrated in Figure 42.) When they built the burdei, they simply transferred the heater into this new structure.[145]

The location of the heating and cooking facility varied. It sometimes stood in the center of the structure though in most cases it was located either in a front or back corner. The stove within the interior plan of the dug-out is discussed below.

10. Smoke Ventilation

For many centuries, Slavic dwellings had primitive if any ventilation systems. Smoke from a fire entered directly into the living area and filtered into the roof or settled slowly.[146] The development from this smoke-filled shelter (kurna khata) to a clean, ventilated dwelling (bila khata, chysta khata) had largely taken place in most Slavic areas by the turn of the century, though many transitional stages were still extant.[147]

Judging by historical context and the circumstances of pioneering, it may be expected that the temporary shelters built by the earliest immigrants were built with no chimney. This, in fact, is attested in descriptions of the most primitive shelters,[148] though not in relation to burdei of the slanted roof type.[149] Considering the size and low roof structures of most of these dwellings, even a small fire would have quickly filled the interior space with smoke. Most of the immigrants had lived in a house with a chimney or at least were familiar with its construction. Builders attempted to find a solution to the problem of smoke ventilation as soon as possible. Two types of chimneys were most common; they were constructed either of woven willow saplings, or made of metal pipe.

Metal chimney piping was easily accessable, judging by the frequency of its use. It was used even in the most primitive structures of this type, such as the Lazhovsky buda,[150] as well as in more permanent and elaborate shelters. Pipes were attached directly to metal plates[151] or to some other part of the stoves. In most cases, the pipes extended through a hole in the roof in an area near the stoves. In one case, the chimney pipe arched towards the rear of the structure and extended out through a hole in the gable wall.[152] A reconstruction of this case is illustrated in Figure 73. The passage of the pipe through the roof was insulated with clay or plaster so that the metal would not contact flammable materials directly.

Though this may not have been possible in all instances, it was desirable to equip the pipe with at least one angular joint. This feature aided the retention of heat and deadened sparks flying up from the fire, as well as protected the fire (at least partially), from rain and debris falling in from the outside. As illustrated in the Svarich photograph, Figure 89, the top of the pipe may also have been fitted with a special cover, serving much the same function as an angular joint.

A second type of chimney was constructed of local and natural materials. A frame of upright rails was mounted from the stove in a circular or rectangular column.[153] Willows and other thin pliable branches were woven in and out of this column, securing and enclosing the

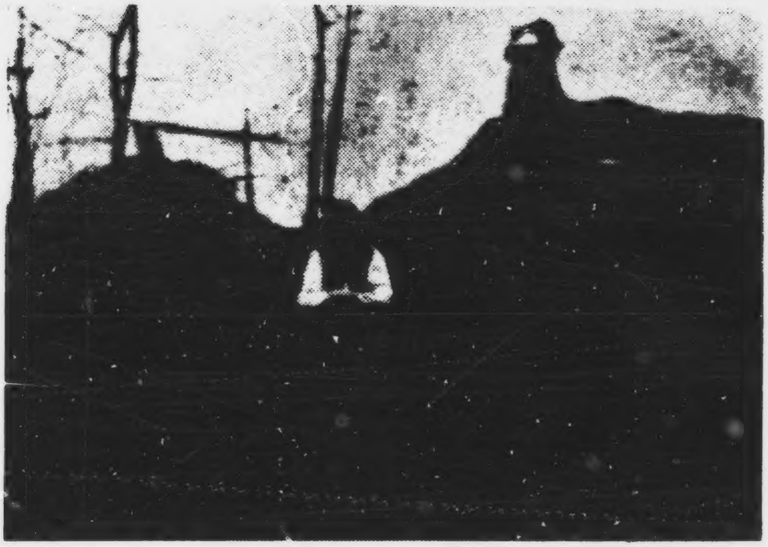


Figure 89: "A typical zemlianka in which Ukrainian immigrants lived in their first years in Canada." A pile of hay (left side) stands adjacent to the dwelling, 1899. (Printed in Petro Svarich, "Do pytannia rozvytku i postupu v materiialnii kulturi ukrainskykh poselentsiv u Kanadi," Zbirnyk na poshanu Zenona Kuzeli, Volodymyr Janiw, ed., Paris: Naukove Tovarystvo im. Shevchenka, 1962, p. 152.)

shape of the chimney. The small branches were woven horizontally, perpendicular to the rails. After the first branch was woven in, it was pushed down to the base of the column. The second branch, in turn, was pushed down over the first. As each consecutive branch was added and pressed down, it helped form a tube or hollow rectangle. Once the stacked branches were piled two or three feet tall, they were plastered from the inside and outside. When a second coat of plaster had dried, and it was not longer necessary to reach inside, more branches were woven and stacked onto the chimney. It was necessary to stop weaving and plaster the chimney in arm-length sections so that the builder could reach inside. It was important to plaster the inside of the column so that the wooden framework would not burn away. A chimney built in a slightly different method is illustrated in Figure 87. (There only the inside is plastered and short sticks are woven as opposed to longer, pliable branches.)

In one case, the chimney was built of a metal pipe surrounded with poles (driuchky) and clay.[154] This example combines the metal with the more traditional insulation of clay.

11. Interior Finishing

In many cases, materials of construction were exposed inside temporary dwellings. In other instances, the structural material was considered insufficient as an insulator and undesirable as a surface. When the occupants had the means to upgrade their shelter, the floors, walls and roof were sometimes plastered (pomascheni). As discussed above, the plaster layer may have been applied during or after the construction. The use of plaster reduced the circulation of moisture and insulated the structure. It produced a cleaner, smoother and harder surface than the raw earth or wood. Once dry, the plaster mass remained solid and relatively water proof. In some instances, the plaster was applied only to certain parts of the structure; to the walls and roof, for example, or only to the roof.[155]

The floors in the majority of burdei were earthen. This fact is consistent with the fact that earthen floors were commonplace in East European folk architecture at this time.[156] The earth was specially trampled and compressed (zatolochena) during construction to form a smooth, hard surface.[157] Heavy traffic areas such as the doorway and in front of the stove would likely compress and harden further with use.

On some occasions, especially if the soil was sandy, a layer of finer, denser clay or plaster mixture may have been applied to the floor to improve its surface. A fine, dense, gray clay (hlei) was applied to the earthen or plastered floor in some cases.[158] This hlei was found only near certain sloughs or ravines, and had to be imported from the nearest known source. It was applied only in a thin layer and served to make the floor smooth.

The earth plaster, or clay surface was sometimes washed with himniak, a mixture of cow dung and water. In some cases, soot (sadzha) was added to the mixture to make it black.[159] Once the himniak dried, it formed a hard and shiny surface which was easy to sweep and keep

Table 22: Principal Type

Interior Finishings, Floor, Walls, Roof

	no finishings	floor earthen	floor plastered	walls earthen	walls wooden	walls plastered	roof rails	roof plastered	whitewash	ceiling	ceiling plastered	other finishings
Archiniuk			x			x		?		?	x	
Bar-V-nok												
Berisina(?S)				p								
Bordian												
C.A.			p				p					
Chmilar												
Dmyterko	x	x		x			x					
Educ. Report												
Eurchuk (S)			x			x				x	x	
Harasewich												
Hawreliak												
Hilkow												
Jubilee book												
Kurelek, 1												
Kurelek, 2												
Kurelek, 3												
Lazhovsky	x	x					x					
Lepatsky		x						x				
Malayko												
Natchuk												
Osinchuk												
Ruptash												
Sachkiw												
Shandro, N.		x	x			p						
Shandro, S.			p			p			?			x
Shemko			x			x		x				
Socholotoski								p				
Svarich	x	x		x			x					
Svarich, 2												
Zabrick												
Zazula		x	x			x	p		?			

clean. In all cases, the floor was sprinkled with water and swept regularly.[160] The surface of the floor was similar to that of later and more permanent dwellings.

The raw earthen walls of a pit were sometimes left exposed in a burdei. In these cases, the earth was patted down to smooth the surface as much as possible and minimize crumbling. Structures built into poorer clay generally had walls reinforced with wooden braces, clay, and/or plaster as discussed above.

Unless it was plastered, the wooden roof of rails and logs formed a visible part of the interior of the shelter. The wood, ideally, was peeled and smooth, though in the majority of cases it appears that the bark had been left intact and the rails were crooked and uneven. Grass or hay as well as loose lumps of dirt protruded from the cracks between the rails.

In at least one instance, a separate ceiling was built into the dug-out structure.[161] Ceilings are suggested by the descriptions of two other cases. The Eurchuk burdei was made of rails (driuchky) tied into a horizontal plane at approximately ground level. The rails were not debarked, and some leaves remained attached to them. The women involved in building the structure tried in vain to plaster these rails, but the clay would fall off the leafy surfaces. One of the women made a torch and singed off the leaves, after which work proceeded more successfully.

The ceiling may have played a role in the type of chimney built into the structure, and certainly contributed to the maintenance of the interior temperature.[163]

It is possible that interiors of certain burdei were whitewashed (pobileni) with coarse lime (vapno) over the plaster or directly over the frame.[164] This would be done only if the occupants were living in the structure for an extended period of time. In most cases, this was considered an unnecessary effort and a luxury at this point in the establishment of their homestead.

12. Interior Plan

a) Two Room Structures

The interior plan of a structure is considered by many scholars as the most fundamental factor in classifying folk dwelling architecture.[165] The earliest shelters in Ukrainian territories were simple, one-roomed structures. Protecting the interior of the structure from direct exposure to the hostile climate was the main motivation to develop a separate entranceway and the earliest two-roomed dwellings in Eastern Europe.[166] The same forces motivated the development of two room structures in Canada at the turn of this century. Three variants of a separate entranceway have been described in this report. The third variant, in which the second room is formed by subdividing the main room itself, shows the greatest development. This variant is attested in the descriptions of the Eurchuk and Zazula cases.

The entranceway in the Zazula description measured approximately three meters, as wide as the structure itself, and a meter and one half long. It served as a storage area for the axe (sukyra), saw (pylka), rake (hrabli), pitchfork (vyla, grali), scythe (kosa), as well as the handmill (zhorna) and any other tools the occupants may have owned. The entranceway in the Eurchuk (Sask.) story was called the khoromy or siny, comparable to the storage-entrance area of more typical Ukrainian folk dwellings. Other than insulation and storage, it was used as an additional sleeping area when the burdei became overcrowded.[167] Entranceways of two roomed zemlianky were used as an additional sleeping and storage area in Ukraine as well.[168]

Single roomed burdei were necessarily designed to facilitate heating, cooking, sleep, work and storage all within that one space.

b) Location of the Stove

The location of the heating and cooking facility varied. In structures heated by more primitive methods, the dangers associated with the fire necessitated that the stove be placed away from the edges of the structure. In the Lazhovsky case for example, the cooking facility consisted of a partially open fire. The walls of the structure were built only of wood and dry grass. A hot metal stove was equally dangerous, and had to be located away from direct contact with combustible materials. On the other hand, the open fires and metal stoves were equally dangerous in the center of the structure. Bedding, clothing or any objects could not be placed near them. The danger of burns, especially with children, was constant.

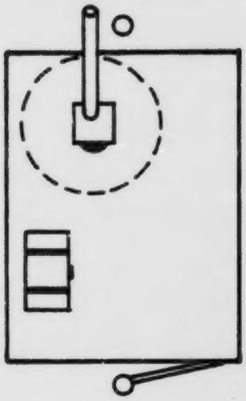


Figure 90: Concept drawing of the location of the cooking plate in the Lazhovsky buda. The circle outlines that area which is left empty because of the fire hazard.

The solution, as illustrated by the reconstructed plan of the Lazhovsky buda, was often a compromise, where the stove was located away from the walls, but not exactly in the center. This problem was reduced somewhat when the structure was built deep into the earth, since the walls consisted of inflamable clay. A metal stove, in these cases, could be located quite close to a wall.[169]

The danger of a fire did not exist to the same degree if the fire was completely enclosed in a clay structure such as a pich or a shparhat. The clay itself was nonflammable, and dispersed the heat. These structures were generally located in a corner of the burdei and the walls of the excavation and the clay stove served to mutually reinforce each other. A stove located in a corner occupied a minimum amount of space.

Table 23: Principal Type

Interior Plan, Stove, Bedding, Furniture

	open fire	clay stove	metal stove	central stove	rear stove	front stove	sleep on floor	raised earth bed	rail bed	bench	sleep on pich	grass mattress	rear location	side location	table	chairs, bench	trunk	sample plans
Archiniuk		x			x				x		x		x		?	?		x
Bar-V-nok																		
Berisina(?S)		x		?		?												
Bordian																		
C.A.	?			x														
Chmilar																		
Dmyterko			x			x	x							x	x			
Educ. Report					x													
Eurchuk (S)		x					x		x				x		-	x		
Harasewich																		
Hawreliak																		
Hilkow	x			p														
Jubilee book					?													
Kurelek, 1																		
Kurelek, 2																		
Kurelek, 3																		
Lazhovsky	x		x				x					x		x	-	-	x	x
Lepatsky		x					x		p			x					x	
Malayko																		
Natchuk		x						x				x				x		
Osinchuk		p							x			x						
Ruptash																-		
Sachkiw		x																
Shandro, N.		p			p									p			x	
Shandro, S.		x			x				x						x		x	
Shemko																		
Socholotoski																		
Svarich			x			x		x				x	x		x		x	x
Svarich, 2		x	x			x			x			x			x	p	x	
Zabrick		x																
Zazula		x			x				x			x		x		x		x

The selection of the stove location was affected by several factors. Stoves were sometimes located in the front corners of burdei, and sometimes in the back. Structures built for winter occupancy were most seriously affected by considerations of insulation and ventilation. Immigrants who were building their zemlianka for only a few summer months could be less concerned about such factors.

In all cases, the stove was built so as not to stand directly in a high traffic area such as the entranceway itself. It was important that the stove was not jarried continuously by the door or any other moveable object.[170] For this reason, a narrow structure could house a stove only in a back corner. A wide burdei, on the other hand, could accommodate a shparhat in the front. A pich, because it was large, was necessarily located in the rear of a dwelling.

Placement of the stove in the back corners protected it from winds and drafts. The warm air near the stove was less likely to be disturbed when the door was opened, and the resultant heat loss in cold weather was reduced. Considering these factors, a temperature differential may have existed between the front and the back of the room. Large clay stoves seem to be most compatible with such an arrangement because the sleeping area could have been located directly adjacent to them in the warmest part of the room.

When located in a front corner, the stove heated the entrance area directly. As such, it tended to offset the temperature imbalance within the structure and supply heat directly to the coldest area. This location seems most suitable for metal stoves. In such a case, the sleeping area would again be located at the back of the structure, farthest from the hot metal and the cold door.

Frontal location stoves had a further advantage in the summer. Undesired heat, smoke and steam from cooking could escape more directly through an open door. If the stove was located in the back, it would likely heat the entire structure before venting out the small window or the distant door. In the summer, it was desirable to keep the interior as cool as possible.

An area near the stove was set aside for the storage of firewood in some structures.[171]

c) Sleeping Area

A second important consideration in the interior plan of burdei was a sleeping area. In some cases, the occupants simply spread grass or hay on the ground and lay down on this. They covered themselves with ther coats (kozhukhy), thickly woven blankets (verety) or whatever else they had. Sleeping on the earth was considered undesireable, since the earth was cool and damp.

In several descriptions, a raised platform constituted the sleeping area.[172] This type of sleeping facility was used for many centuries in Slavic dwelling architecture, as discussed in Chapter I and V above. This arrangement may be considered a transitional arrangement between sleeping directly on the ground and sleeping on an elevated bed. These sleeping raised platforms were dryer and warmer than the floor itself.

Wooden benches, also served as sleeping areas.[173] These represent one more step towards the development of the modern bed. The benches were generally located against a wall, similar to their earthen counterparts.

The Dmyterko dug-out featured a seemingly primitive sleeping facility. As has been discussed above, the sleeping area was burrowed into the earthen wall of the shelter. This cavity was piled with various rags to insulate and soften it.

A bed consisting of rails or boards allowed the circulation of air and moisture underneath the occupants, and as such was healthier and more comfortable. In this arrangement, the sleeping settlers no longer came in close contact with the clay mass. Sources indicate that beds in temporary structures were most often made of rails. The frame consisted of vertical and horizontal poles tied to each other and driven into the floor and walls for support. This frame was laid over with a row of horizontal rails. The entire structure was then covered with straw or hay and blankets.

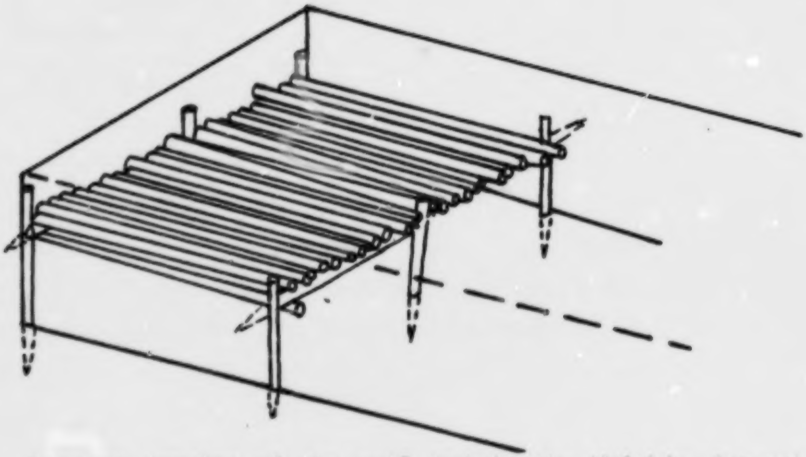


Figure 91: Concept drawing of the rail bed in the Woitkiw dug-out. The bed is secured to the walls and floor of the pit.

In at least one case, the top surface of the pich served as an additional sleeping area.[174] This surface was flat and slowly radiated the heat stored during a day of cooking. The use of a pich as a sleeping area is attested in more permanent dwelling architecture in Ukraine and in Alberta.[175] However, few temporary dwellings were equipped with a pich large enough for an adult to lie on. In the Archiniuk case, for example, only the children could sleep there.

A key factor affecting the type and location of the sleeping area was, of course, the number and age of the occupants. In some instances, the bed occupied only one corner of the room.[176] In other cases, it extended from wall to wall.[177]

In many structures, the entire family, regardless of age and sex, slept together on one bed.[178] Even strangers, spending the night, would share the bed, sometimes crowding it to the point that everyone had to sleep crosswise (poperek). Other arrangements allowed the different members of the family to sleep separately. The parents, in one case, slept on a bed, whereas their five children slept on the floor.[180] The Archiniuk children, as has been stated, slept on the pich while their parents slept on a bed of rails.

Sleeping areas were located in the warmest and safest positions. They may have been located adjacent to a clay pich[181] and were invariably situated in the rear half of the structure. It was necessary to keep flammable bedding a safe distance from a metal stove or open fire.[182]

d) Food Preparation

In some cases, a specialized area and facility existed for food preparation and various other activities. Some pioneers built a table specifically for this purpose.[183] In other structures, the trunk (skrynia, kufer) transported from the old country served as a table.[184] In a great many instances, however, this work was done on a bench, a sawed off stump,[185] or on the floor.[186] Food was prepared on the hot surface itself as well as in adjacent areas. One informant explained that there was nothing in their burdei at first because they simply had no possessions.[187]

e) Storage

A further function of the early shelters was to store the property of the occupants. As has been stated this was simple, in some cases, since they had very few material possessions. In other cases, however, a substantial quantity of baggage had been transported from Europe, and supplies had been bought in Edmonton. Everything had been piled high on a wagon and carted to the homestead.[188] More supplies were also bought while the family was living in their burdei. Large implements such as farm machinery could be kept outside. They were kept on, under or near the wagon if the immigrants owned one. Smaller objects were stored indoors, especially if they could be damaged by rain and snow.

Clothing, valuables, and various fragile objects were stored inside a trunk or trunks, if these existed. Trunks were placed in a corner[189] or in the central area of the burdei if used as a table.[190] Other objects were stored wherever most convenient. Things used frequently were placed so that they were easily accessible. Conversely, objects not used for a long period could have been hidden farther from reach. The platform of earth around the perimeter of the excavation protruded sufficiently in some cases to be used as shelving.[191] Low irregular spaces, such as corners and the space under the rail bed were also likely locations for storage. In the Svarich buda, the edges of the bed area were packed with bulky sheepskin coats (kozhukhy), English books (tlumachi), and other baggage.[192] The roof intersected the bed area at a relatively acute angle, and the extreme sides of the structure were very low. The baggage helped insulate the sleeping family and occupied an area least suitable for other use.

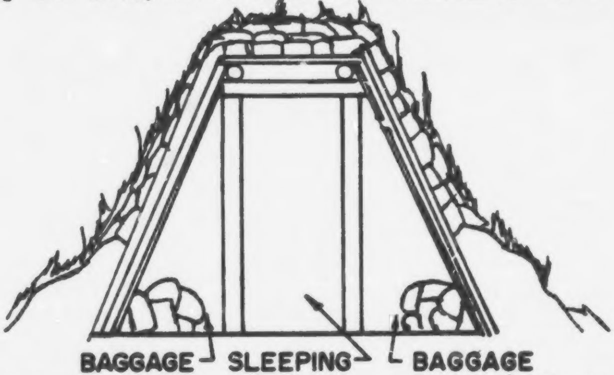


Figure 92: Concept drawing of the rear half of the Svarich buda. Baggage is packed on both sides of the sleeping area.

13. Sample Structures

a) Lazhovsky

The single informant for this description was Mrs. Anne Zailo, an occupant in her early childhood. The informant's family consisted of her parents, herself, aged two or three, and her sister. The Lazhovskys emmigrated to Canada in 1901. They rented a place to sleep from relatives for several years, and moved onto their own land after Mr. Lazhovsky had earned some money. They arrived on their homestead in the Plain Lake area in the early spring, before the snow had melted away.

The family owned a wagon, two working oxen, two cows, a trunk (kufer) from the old country, as well as tools and implements such as an

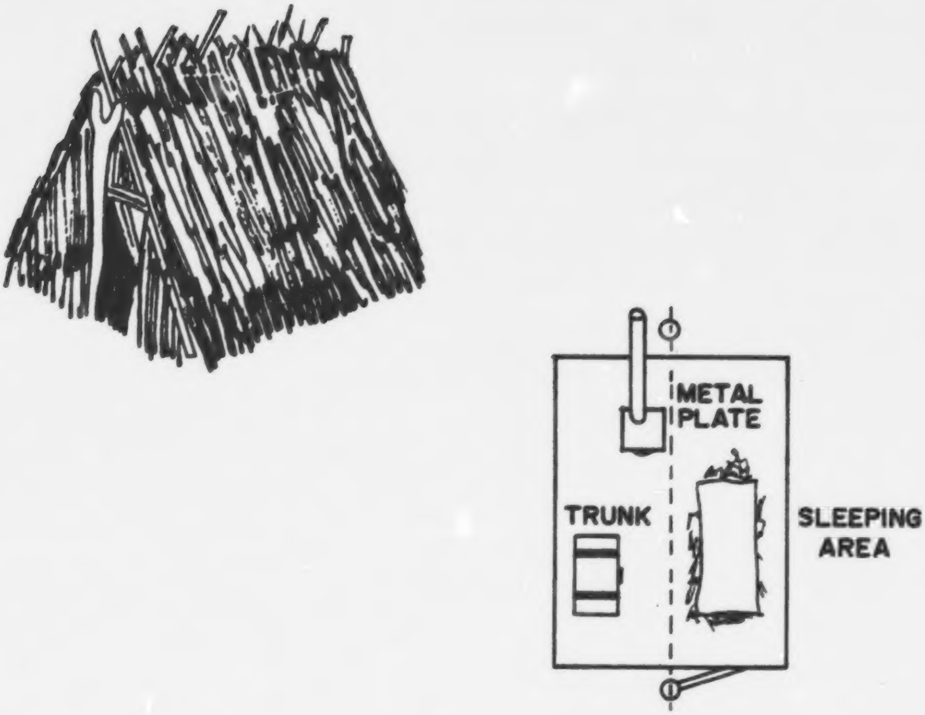


Figure 93: Concept drawings of the Lazhovsky buda. External view and plan. See also Figures 73 and 90.

axe and scythe. Somewhere, they had acquired a flat metal plate (bliekha) for the stove and a pipe for a chimney. They arrived with the intention of building a temporary shelter for the summer, and constructing a log house by the fall.

The buda, as they called it, was built in one day. A location was chosen and cleared for the site. No pit was excavated, and the roof frame was built over level ground. Two poles (slupy), made of poplar (wosyka) were dug into the ground at the north and south edge of the planned structure. Each of these posts had a large fork at the top. The branches (khabiny) of the fork had been cut off short. A large, heavy beam (patyk) was lifted by the two adults and placed horizontally into the forks of the two poles. Rails (driuchky) were leaned (pidperani, zalozhyni) onto the central beam from either side. Since no grass had grown yet that spring, the informant's father cleared the snow from the dried grass (sternyk) of the previous year. This dry grass was cut (nakosenyi) with a scythe. The sternyk was placed on the frame to cover the entire structure, and no other roofing materials were used. Once the frame and the roof were in place, there was clearance for adults to stand erect in the central corridor of the buda, but only the children could crawl and play at the edges.

The north and south walls (fasiady) were covered with a row of vertical rails (driuchky). One horizontal driuchok was fastened at the base of the north wall, extending to both sides of the slanted roof.[193] This pole restrained all the vertical poles from sliding out of place. A second horizontal pole was fastened across the wall at a higher level. Its length corresponded with the shorter breadth of the structure at this point. This upper pole kept the vertical poles from falling away from the structure.

The front wall was built in a similar fashion, leaving an open space for the entrance to the side of the central post. The door frame was built with only a few poles. A cloth sheet (prostyrylo) was hung over the opening and served as a door. The entire structure was built without a hammer or a nail.

The metal plate (bliekha) and pipe served as the stove in this buda. The informant's mother dug a hole into the ground slightly north west of the center of the structure. The metal plate was fitted over the hole and a fire was lit underneath it. A hole had been cut into this plate from which the chimney pipe extended. The pipe ascended at an angle and through an opening in the back wall.

The buda remained relatively empty except for the cooking plate and a large trunk (kufer) which contained articles brought from the Old Country. The trunk was probably placed on the west side of the structure. The occupants slept on the ground, on dry grass (sternyk) which had been spread on the east side of the structure, well away from the fire.

This shelter was occupied for two or three months, while the

Lazhovsky's were building their first more permanent house. The new one room log house was almost complete by autumn, and was occupied before it became very cold.

The buda was left intact for a short while, and the children played in it. It was later dismantled. That process took only a few hours.

b) Svarich

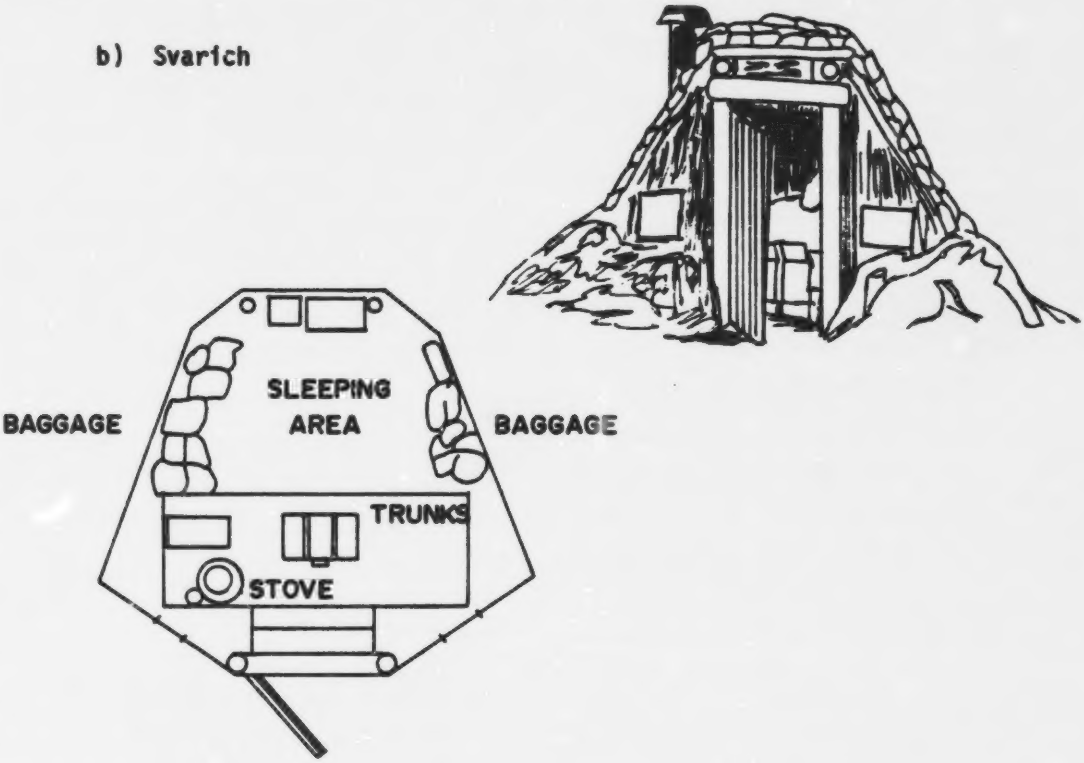


Figure 94: Concept drawings of the Svarich buda. External view and plan. See also Figures 56, 63, 72, 86 and 92.

The primary informant for this description was Mrs. Hafia Janishevski, one of the younger children of the Svarich homesteaders. Her older brother, Peter Svarich, describes burdei in his article "Do pytannia rozvytku i postupu v materiialnii kulturi ukrainskykh poselentsiv u Kanadi,"[194] and likely describes many features of his own burdei there.

The Svarich family emigrated from near the village Tulova, Sniatyn, Galicia, in a large group of sixteen families from three neighbouring villages. The immediate family included Ivan and Maria Svarich, their two sons, and five of their daughters as well as one son-in-law and two infant grandchildren. The family was relatively well off in the village and collected sufficient funds to guarantee setting themselves up in the new land. Both sons were educated. They had planned the trip several months in advance. The eldest son, Peter had begun to study English. Neighbours and other villagers often called upon Peter for advice and guidance regarding the journey.

The group arrived in Strathcona in the early spring of 1900. The family stayed in the Immigration Hall while the men journeyed on foot (*na pikhotu*) to look for land. Assisted by another Ukrainian settler who had arrived earlier and could read the survey posts, they chose homesteads six miles east of Mundare. Upon returning to Edmonton, Ivan Svarich bought two horses and a wagon for three hundred dollars. In Edmonton, they bought kitchen utensils, food supplies, a plow, panes of glass for windows, and other items they foresaw as necessary. Ivan's son-in-law purchased his own team of horses and a second wagon. The family also bought several sheep.

En route to the farms, they rented temporary accommodations for the women and children at an acquaintance's farm. A garden was planted there so that the family could have vegetables by the fall and through the winter. The four men and one older daughter travelled thirty miles further to their own land. For the first several weeks, they slept under the wagon, covering themselves with horse blankets and whatever else was available.

Their first objective was to build a temporary shelter so that the entire family could move onto the land. After that, they planned to build other structures and a more permanent house. For this reason, they built a relatively simple *buda*. Other dug-out dwellings in the area were built much more sturdily and elaborately, especially if those occupants intended to spend a winter in them. The Svarich *buda* took two or three weeks to build.

The site for the dwelling was selected not far from the surveyed access road. It was built into a slight slope, the entrance facing south. An excavation was made in the earth, over a meter wide and approximately fifty centimeters deep. The excavated hole was shorter and narrower than the planned wooden frame. That part of the interior which was not excavated would be used as a sleeping area, storage space, and bench. The grass that had been growing on these areas was left intact.

Two posts (slupy) were mounted into the ground at the south edge of the hole. A short horizontal crosspiece (poperek) was placed onto them. This was later to become the door frame. A long beam (brus) was suspended from this door frame to two or three other posts in the north end of the structure.[195] The frame was covered with logs angled onto the central beam. The structure was wider in the front than at the back. The various structural components were secured with a twisted wooden "rope" (pereveslo) made of thin pliable branches (lizhchi) - possibly of hazel nut. When the pereveslo dried, it would hold strongly. The slanting logs were placed thickly (husto) with their thicker ends up (stortsom). The bottom of the roof planes was covered with other smaller sticks and branches (badery), to fill the spaces.[196]

The front facade of the structure was convex, receding from each side of the door frame. The sides of the facade were covered with vertical rails. One window pane was mounted on each side of the door.

Hay and grass were cut (skoseni) with a scythe and laid over the entire structure. The lower levels of the roof planes were mounded with clay (hlyna). Sod strips (derni) were plowed lightly (lehko zorani) from nearby prairie. They consisted of not much more than grass and roots. The strips were placed grass side up, side by side over the remainder of the structure.

The door was made of boards, which had been purchased in Edmonton from Mr. Frieser, who operated a sawmill (trachka) on the river flats. Two stairs descended to the interior floor level. They were cut into the earth on the interior of the shelter.

A small metal stove (kukhonka) or heater (hiter) was placed in the south-west corner of the buda, next to the door. This stove had been bought in Edmonton.

The north half of the structure (not excavated) served as the sleeping area. Hay and grass were brought in and piled onto the "bed." The east and west edges of this area were not useful for sleeping since the roof angled acutely to the ground. This area would also have been quite cold. These edges were piled with the occupants' sheepskin coats (*kozhukhy*), the English books (*tlumachi*) and various other baggage (*bagazh*), stuffed into sacks (*mishky*) of nettle cloth (*kropyvniani*). All twelve members of the family slept side by side on this bed.

The family's large flat-topped trunk was placed in the middle of the excavation and served both for storage and as a table. The occupants could sit on the edge of the bed, as well as on a bench-like earthen platform in the southeast corner of the *buda*. It is possible that several sawed-off stumps were brought in for additional seating. A second trunk and several boxes were located in the northwest corner of the excavation, near the stove.

While the men were building their *buda*, they and the rest of the family occasionally commuted from the rented house (*komirna*) to their farmstead and back, hauling food and other supplies. These journeys were made in either of the two wagons. The family moved into the *buda* on Pentecost, (*Zeleni Sviata*), decorating the structure with green leaves for that feast day.

A cow had been bought at an earlier date from a rancher near Vegreville. A fenced area (*grazhda*) near the *buda* was made for the cow.

The Svarich's considered their *buda* as being built very hastily (*na skoru ruku*). It was not mosquito proof and did leak when it rained. During that summer they built a three roomed house (*khata*), a barn (*stainia*) and a granary (*shpekliar*). They also cleared land for the next year's crop. The next year, Ivan's son-in-law moved out with his family onto his own, adjacent homestead.

The Svarich's established themselves on the land very quickly because they had four adult men in the family who all worked very hard towards that end during that time. They had the financial means to buy everything they needed including stock, machinery and provisions. None of the family members needed to leave the farm to find work. They were also fortunate in that at least one of them could communicate in English. They had set up contacts in Canada before their arrival and were generally aware of the situation around them.

b) Zazula

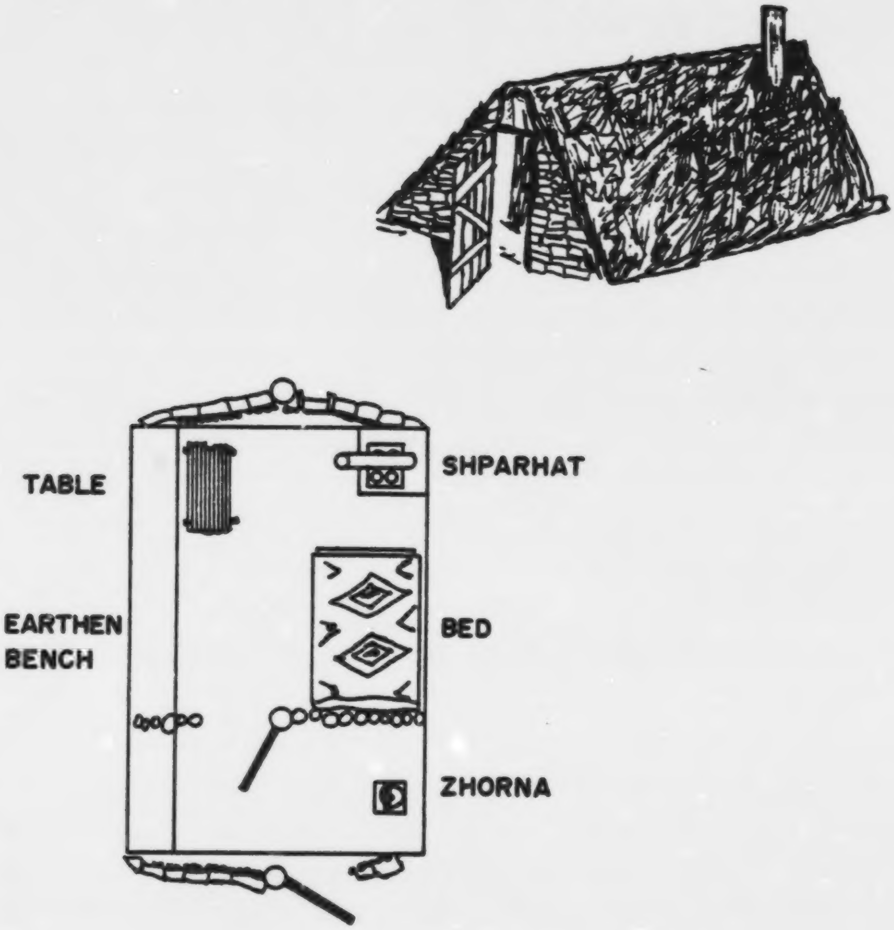


Figure 95: Concept drawings of the Zazula burdei. External view and plan. See also Figures 62 and 84.

The Zazula case study is actually a composite, containing elements of various descriptions heard by Mr. Wasyl Zazula. The details are conveyed, however, so as to give the impression of one specific structure. This structure is not identical with the replica of a burdei designed by Mr. Zazula and built in the Shandro Ukrainian Museum, though the description does share many features with the museum model. Mr. Zazula did not live in a burdei himself, though his wife has vivid collections of the Stefan and Nikon Shandro burdei.

The majority of Ukrainian pioneer settlers to the Shandro area were Bukovynian. Most burdei had to be built on flat land because this area had few hills. There would have been several advantages, however to building into a hillside. Burdei in general faced south, though considerations of context sometimes overruled this tendency.

Once a location had been selected, the pit was dug approximately 60 cm deep, four and one half meters long, and three meters wide. The size of the dug-out increased or decreased according to the size of the family or families who were to occupy it. A bench-like area was sometimes left unexcavated along one of the long walls of the pit. This bench measured approximately 45 centimeters tall and 45 centimeters wide, to be used for storage, as well as for play and a sleeping area for the children.

Once the excavation was complete, two poles were erected vertically on the outside of the pit, each at the center of a short wall of the structure. A strong, heavy beam (poperek) was placed horizontally across the two support poles. Various poles and rails were leaned against the beam from either side. The poles were not necessarily the same size, nor were they all straight. The structure was built in a hurry (na hurri), so the builders did not bother to remove the bark from these poles.

The gable walls of the structure were closed in with vertical rails. The rails leaned slightly into the structure, held there only by gravity until sod was placed over these walls. Nails were rarely used. Certain spaces were left open on one end for the door and on the other end for a window.

Once the frame was constructed, it was covered directly with sod (kytsky). The sod strips had been cut with a shovel (ruskal) from nearby prairie (preri). The sod strips were approximately ten centimeters thick and twenty centimeters wide. Each piece was left as long as was convenient to carry. The sod pieces were stacked over the rails of the burdei, covering the entire structure except for a door, a window, and a hole for the chimney. Each sod piece was placed, grass side up, in a horizontal position. If they sloped either towards or away from the wall, they would allow rain into the structure or slide off the wall themselves. More logs, sticks, and branches could be piled onto the structure once the sod was in place.

The entranceway was simply left open at first, or covered with a blanket. A door of wooden slabs (shlebsy) was later built and fitted into this opening. A hole (duchka) was left in the back wall for a window. It was filled at first with a single pane of glass, either brought with the immigrants from Europe, or bought in Alberta. The window was eventually replaced by a larger window of several panes and a wooden frame.

An interior wall was built parallel to the front door, approximately one and one half meters from the entrance. This wall was built of rails or logs. It contained a door similar to the exterior door.

A stove (shparhat) was built in one of the back corners of the burdei. The body of the shparhat was made of clay mixed with grass. A metal plate (bliekha) was placed on top of the shparhat body and served as the cooking surface. The bliekha was occasionally brought by the immigrants from the old country, though more often it was acquired somewhere in Alberta. The bliekha varied in shape and thickness, depending upon its source. It was often up to 7 millimeters thick.

The immigrant usually bought some metal piping for a chimney. It extended from the shparhat through a hole (duchka) in the roof and beyond the structure. The duchka was insulated with clay plaster to isolate the hot metal from flammable materials in the roof.

At first, the interior of the structure revealed the poles and beams of which it was made. When the family realized that it would be living in the burdei for an extended period of time, they made plaster from clay and chopped grass, and lightly plastered (trokha mastyly) the surfaces. The floor was covered with this same plaster mixture and compressed (zatolochyna) to form a flat, hard surface. A grey clay called hlei was brought in from a source several miles away, and spread thinly over the plaster floor. This hlei was very fine and could be smoothened more than the plaster.

The front area, between the door and the interior wall served primarily as a storage space. A handmill (zhorna) was kept there, as well as an axe (sukyra), saw (pylka), rake (hrabli) pitch forks (vyla, grali), and other such tools. The additional wall helped to insulate the inner living area, especially in the winter. It was possible to enter and exit without ever exposing the living area directly to the elements.

With the shparhat in one back corner and the bench-like platform along the other wall, the general plan of the interior room was predetermined. A bed, made of rails, occupied the last free corner of the room, and a table, when it was later built, stood in the back corner next to the bench platform. The table and bench area served as work places when there was enough light to work indoors. Certain areas in the inner room; the table, the bench, and under the bed were used for additional storage.

The majority of Ukrainian immigrants to the Shandro area lived in such structures, occupying them for an average of three years.

d) Archiniuk

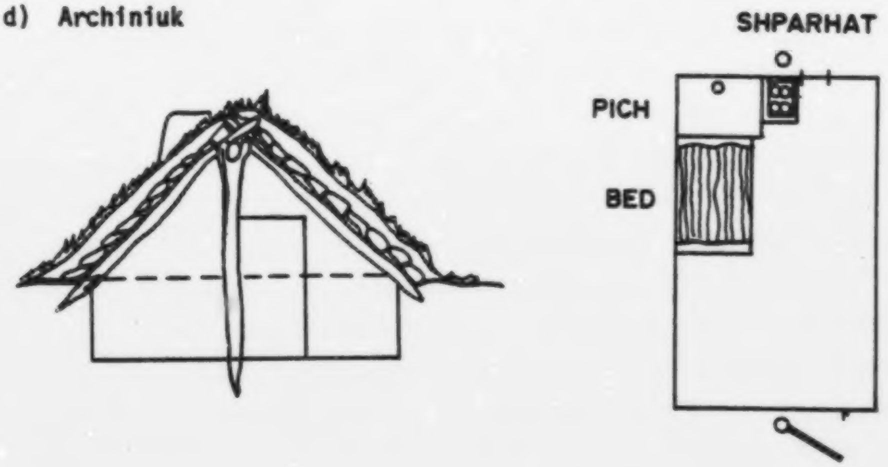


Figure 96: Concept drawings of the Archiniuk dug-out. Frontal view and plan.

Mr. John Archiniuk was the primary informant for the description of the burdei in which he grew up. He was five years old when it was built and the family occupied it for seven years. The Archiniuk family arrived on their homestead in the Two Hills area around 1910. The family was quite large and several children were born while they lived in the burdei.

A large hole was excavated in a flat, level area, approximately six meters long and four meters wide. Two posts were dug sturdily into the earth, one at each end of the pit. A long crosspiece (sliup, not a svolok) was laid over the posts.

Rails (driuchky) the width of modern fence posts were laid side by side over the entire length of the burdei. These posts and rails were quite large since they supported the weight of the roofing materials. A layer of slough grass covered the rails, followed by a layer of sod pieces (kitsky), placed grass side down. The entire structure was then covered by an additional layer of loose dirt, which eventually became overgrown with weeds and grass.

A door was located in one gable end of the structure to the side of the central post. A small window was located in the other gable.

An oven (pich) and a stove (shparhat) served in the preparation of food and as sources of heat. The pich was large enough for the children to sleep on it at night. It was located in the back corner of the structure. The shparhat was attached to it along the back wall. A chimney (komyn) rose from the top surface of the pich through the roof. It was made of a metal pipe insulated with wooden poles (driuchky) and clay.

The walls and ceiling of the structure were plastered (pomascheni). The plaster generally kept dirt from falling through the roof. The structure repelled rain on most occasions, however when a sudden, heavy downpour occurred, the plaster (pomast) on the ceiling would sometimes get wet and clay would fall into the room.

The informant's parents slept on a bed, likely adjacent to the warm clay oven. The children slept on the pich itself.

After it was vacated, the structure deteriorated. The site has been plowed over now for many years.

B. Primitive Type

The structure of the most primitive shelters displayed a great deal of variation since each was improvised in relation to the immediate context. The discussion in Chapter II D suggests two "basic forms," though others could be designated from further descriptions.

In one form of structure, a shallow hole was scratched into the earth with a shovel or a stick. The dirt from the hole was piled on either side of the hole to make two mounds. Hay and grasses were laid along the length of this nest-like depression. Sticks and branches (hiliaky) were gathered and planted into the earthen sides to shield the hole. At night, the immigrant family would crawl underneath the foilage to go to sleep. The hay served to make the shelter dryer, cleaner and softer. The earthen mounds served to protect the straw and the occupants from wind, as well as to support the branches. The branches provided some shelter from mosquitoes, and helped retain the sleepers' body heat, but were of little use when it rained.[197]

This type of structure varied in size. An eighty-centimeter-wide interior was all that was necessary for a single occupant, whereas a family would require at least enough width for everyone to sleep side by side. The depth also varied. In most cases, the occupants could only crawl in and out. The entranceway to a structure such as this consisted of a hole in the earthen mound and a break in the foilage, usually just large enough for a person to crawl through.

The second form of primitive shelter was centered around a vertical post, either the actual trunk of a growing tree, or some other vertical support rising from the ground. Fallen branches and dead wood were leaned against the central pole to form a conical space underneath. This exterior may have extended a full 360 degrees, but more likely enclosed only part of the cone. The space between the exposed radii became the entrance.

A structure such as this was described in the memoirs of one immigrant.[198]

> There is no way to construct even a temporary buda, since we have neither an axe, a saw, nor a spade . . . but to live in the wilderness without a shelter is most miserable. We drag broken branches and lean them up against a larger tree, building something that looks like a tent. Plucking grass, we carry it to this buda and spread it on the ground so we could at least have something to lie on overnight. We sat under that tree for more than one day, as well.[199]

The quotation describes the situation only briefly, but gives a clear image of the context and situation. Body heat provided a bit of warmth inside the structure. A small open fire under a smoke-hole in the roof could heat the structure more.[200] This fire was also used to cook food as necessary.[201]

C. Deep-Hole Type

The excavation of a deep hole shelter varied, sometimes attaining two meters or more. Descriptions suggest that these structures were often built into the sides of hills. If this was the case, then the depth of the hole would change from one end of the structure to the next. The interior floor, it is assumed, would be level. The roof itself may have sloped with the terrain or some technique may have been employed to raise the shallower end of the roof.

The orientation of two deep-hole temporary dwellings has been established. The M. Tkachuk and the Tokaruk cases faced east and south respectively.[202]

The tall earthen walls of the deep-hole dug-outs were sometimes left as such[203] and sometimes braced with wood. The Huculak dug-out was braced with a solid framework of logs placed around the perimeter of the hole.[204] The walls of the Tokaruk burdei were braced with a row of thin poles laid horizontally. This wall of poles was secured by vertical poles extending from the floor into the roof. The up-right posts were spaced at approximately 60 cm intervals.[205]

If the dwelling was covered simply with horizontal logs, these were laid out over the hole to protect the interior as much as possible. At first, these logs and poles were covered only with branches and foilage (hiliaky,[206] korcha.[207]) When possible, however, they were covered with an additional layer of dirt or clay (hlyna),[208] likely that which had been excavated from the hole. In some cases, a layer of hay (sino) was spread over the wood to form an intermediary layer under the clay mound. The leaves or hay served to help prevent the dirt from crumbling into the hole.

A description of a deep-hole burdei in Bukovyna illustrates that the roof in some dug-outs was formed into an arch by bending a row of pliable poles over the top of the hole.[209] This technique suggests the "car" roof type described in Kansas sod houses.[210] The Tokaruk case in Alberta appears to have been a taller variant of this arched roof form.[211] Several pairs of vertical poles extended from the floor of the excavation. After rising past the top of the walls, each pole was curved over the hole and secured to its similarly curved counterpart from the opposite side. The poles formed an arched "tunnel" shape when they were all in place. The structure was built into a sloping hillside. The front of the excavation was approximately one meter deep, with the arching poles extending another meter above the ground. In the back of the structure, the excavation was much deeper. The tension of the bent poles served dually to support the weight of the roof and create an outward pressure against the walls of the structure.

The Tokaruk structure may be seen as a transition into the slanted-roof type of structure, since it is possible to speak of "gable ends." The doorway was located in the "gable." The entranceway consisted of two or three large steps, leading to a wooden door. The door frame tilted back towards the structure, opening forwards and upwards.

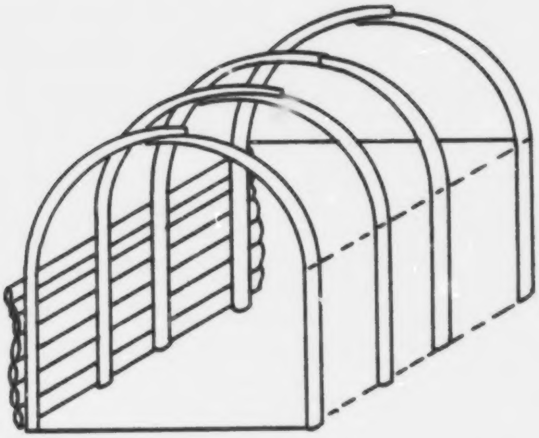


Figure 97: Concept drawing of the structural frame of the Tokaruk burdei.

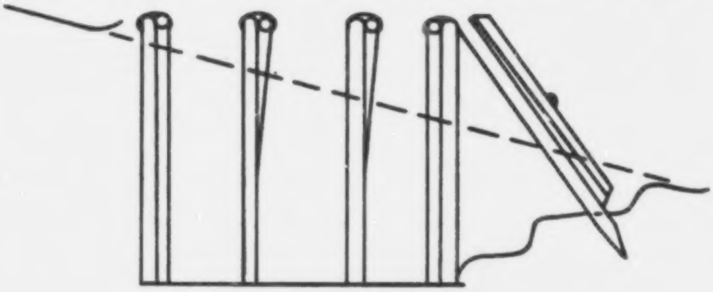


Figure 98: Concept drawing of the profile of the Tokaruk burdei.

The entranceway to less elaborate deep-hole structures consisted simply of a space between roofing logs. Some type of stairway or ladder was necessary to facilitate descent and ascent. If the structure was built into a hill, the entrance opened downhill, where the pit was shallowest. The most rudimentary deep-hole structures likely had no door as such. Sticks and branches, or possibly a blanket may have been positioned over the entrance if this was deemed necessary. More permanent dwellings, however, generally had more elaborate doors and entranceways. The Huculak dug-out had a door made of two wide boards (doshky) which had been hewn into shape. Since Mr. Huculak had been a carpenter in the old country, he also fitted the door with a 20 centimeter window (shyba). Three large steps, carved into the clay on the outside of the structure, served as an entranceway to the door, which was situated at the lower interior level. Each step measured fifty centimeters deep or more. Short, narrow steps would have crumbled with use.[212]

A small fire, kindled in the center of the hole served to heat the most temporary deep-hole dwellings. Smoke vented through the entranceway in the roof. The Huculak dug-out, on the other hand, featured a stove with a manufactured metal top. The stovetop was large enough to accommodate four pots. This shelter also contained a bed, probably made of rails. Mr. Huculak built a handmill (zhorna) which was housed and used inside the dwelling.[213] The Tokaruk burdei housed a red trunk (skrynia) which contained their best clothing and other special objects.[214]

D. Log-Wall Type

The log-wall type of temporary dwelling in many cases closely resembled the familiar log cabin, known in North America as the rustic abode of pioneers and fur traders. Similar structures had been built in many parts of Europe and North America.

Log-wall temporary dwellings, as built by Ukrainian immigrants in Alberta, were often built into hillsides. If an immigrant found a suitable hill on his property, he may have purposely chosen to construct a log-wall dwelling since it was most compatible with the inclined terrain. A log-wall structure could take advantage of the stability, insulation and drainage of a hillside while retaining a simple rectangular shape. Log wall structures were sometimes built deeply into the ground.[215] In these cases, the earthen mass was the primary structural component of the walls, the logs served as a supplementary material to complete the form wherever the walls were not defined by the pit. In other cases, the log-wall dwellings were built only slightly below ground level.[216] Here, the main construction consisted of logs and the earthen hole served as an additional feature which allowed a reduction in the height of the log zrub and provided a clean clay floor. (The loose topsoil would likely have been removed.)[217]

Figure 99: Ceiling and roof of the Yushko dug-out. (Photograph taken in 1983 by Andriy Nahachewsky.)

Figure 100: Interior of the Yushko dug-out, south west corner. (Photograph taken in 1983 by Andriy Nahachewsky.)

Table 24: Log-Wall Type

Structure, Roof, Walls, Plan

	flat roof	gable roof	above ground	dug-out	depth (m)	flat area	hillside	sod roof	earth roof	shingles	walls mounded	walls plastered	walls wooden	south orientation	east orientation	other orientation	1 room	2 rooms	ceiling
Basaraba	x			x			x						x	x			x		
Bodnarek			x			x							p						
Danelesko		?		x	1.2			x				x							
Danelesko 2		p		x	.5							?					p		
Halitsky			?			?		x					?					x	
Herasym		x		x			x					x					x		p
Hushulak	x			x		?		x									x		
Iwaschuk	x		x			x		x				x						x	
Krawchuk	x		p			x							x				p		
Kurylo	p		x			x												x	
Sawchyn (S)		x		x	2		?		p						x		?		?
Serna	x			x	1						x				x				
Shipko	x		x			x			x		x	x					p		
Swyschuk	x			x	2		x	x					p	x			x		
Tkachuk, P.		x		x	2	x		x	x		x						x		?
Yushko		x		x	.2	x				x		x			x		x		x

The function of the excavation was clearly considered unimportant in many cases, since the builders preferred to construct the dwellings above ground.[218] One informant remembered only a negative characteristic of dropping the structure below ground level. She spoke of how it promoted rheumatism because of the dampness.[219] In her eyes, a dug-out structure was clearly inferior to a log-walled cabin built above the ground. The practice of building permanent dwellings above the ground verifies this inferiority. (The desire to minimize dampness from the earth later motivated the development of separate foundations which raised the floors of houses even higher.)[220]

If the structure was being built in haste, the simplest type of roof covering was made by laying a row of parallel horizontal rails over the top of the walls.[223] The flat roof was built horizontally,[224] or in an incline.[225] An inclined roof of one plane is called a "shed roof" and is described in studies of the sod house.[226] The roof of hillside dug-outs generally inclined into the hillside.

The rails (driuchky) on the roof were placed close together to form a base for other materials. A second, perpendicular row of rails may have been laid above the first to make the flat roof more secure.[227] A layer of grasses or straw was generally placed over the rails as a further base to support the earth or sod.[228] In some structures, however, the sod was laid directly over the rails, the structure were less satisfactory in the rain.[229]

The sod layers on the roof were piled to a depth of fifteen to twenty centimeters[230] or more. If the roof was mounded with earth, it may have been piled over a meter in depth at some points.[231] A roof of this depth would have been very heavy and required strong support.[232] In some structures, the earth[233] and sod[234] coverings were mounded not only onto the roof, but covered the entire structure including the walls. The structural components of the dwellings became less visible from the exterior, and the buildings resembled a large shapeless mound.

A roof covered with sod was generally most effective in the winter and in dry weather. During spring thaw, however,[235] or in heavy rains,[236] the flat roofs regularly soaked through. The shape of gable roofs helped water run off more effectively. Flat roofs were removed and replaced with a gable roof when possible.[237]

Gabled roofs were built by means of rafters (krokvy). The pitch of the roof varied with the type of covering which was applied onto it. Sod required a relatively low angle, to prevent the turf itself from sliding off the roof. Thatched roofs, on the other hand, were built on a steeper angle to facilitate a fast runoff.[238]

The majority of gable roofed structures featured a separate ceiling.[239] The ceiling was built of an additional row of horizontal poles[240] or boards.[241] The ceilings may have been plastered from above,[242] below,[243] or both.

A standard form of door for log-walled shelters was built of two or three wide boards.[244] The Kurylo dwelling had a separate entrance room (siny), to which the exterior door was simply a woven blanket (vereta). The interior door (dveri) leading to the second room (rumyk) was made of shaved slabs of wood.[245] If stairs were necessary, they were generally excavated on the interior of the structure,[246] possibly in a special entrance area built onto the main room. The Yushko dwelling, being built approximately twenty centimeters below ground level, required only a single step down. This was located directly inside the threshold.

The most rudimentary log-wall structures were built with no windows, since these required a significant amount of extra work to install.[248] Logs sawn for a window would have required reinforcement with pegs (tybli) to keep them laterally stable. When a window was built, it was generally located in the south wall, to maximize the effect of the sun's rays.[249] The Danelesko dwelling was excavated into the earth so that its windows were located just above ground level.[250] This arrangement maximized the insulation and sturdiness of the dug-out without sacrificing the interior brightness of a more substantial dwelling.

Cooking and heating facilities varied in log-wall structures in the same ways as they did for other types of temporary dwellings. A simple stove (kukhnia) of stones and clay,[251] a mud stove (shparhat) with a metal top,[252] a clay oven (pich),[253] and a store-bought metal stove were all documented in the course of fieldwork.[254]

The majority of temporary structures of this type contained only one room, though a significant number had two-rooms.[255] The increased incidence of two-roomed interiors in relation to other more primitive temporary structures coincides with the overall complexity of the log-wall type. The Iwaschuk buda was arranged so that the kitchen and stove were located in the outer room. The inner room was used for sleeping and eating.[256] This floor plan is similar to those of the zemlianka and napivzemlianky described earlier by M. Prykhodko.[257] Food was stored in the outer room (siny) of the Kurylo structure, and the inner room contained a large "bed" made of rails, extending from wall to wall.[258]

The interior of these structures, aside from food preparation and sleep, were also used to store the occupants' possessions.

ENDNOTES

Chapter V: Structure

A. Slanted-Roof Type

1. Method of Construction

1. Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky structure, Andriy Nahachewsky, September 7, 1983.

2. Personal Interview with Mrs. Anna Zazula, Andriy Nahachewsky, August 1, 1983.

3. Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky structure, Andriy Nahachewsky, September 7, 1983.

4. "Koshman, K." biography, in Dreams and Destinies, p. 407.

5. Telephone Interview with Mr. Nick Zukiwski, describing the Shemko structure, Andriy Nahachewsky, August 3, 1983.

6. Personal Interview with Mrs. Chmilar, describing the Woitkiw burdei, Andriy Nahachewsky, June 14, 1983.

2. Excavation

7. See the description of a burdei in the Hutsul region as recorded in Shukhevych "Hutsulshchyna," pp. 111-112.

8. Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky buda, Andriy Nahachewsky, September 7, 1983.

9. Marie Lesoway, The Hawreliak House, A Structural History, (Edmonton: Historic Sites Service, 1981), p. 8.

10. Telephone Interview with Mr. Nick Zukiwski, describing the Shemko dug-out, Andriy Nahachewsky, August 3, 1983.

11. Eurchuk, "Zhinochi doli," (Sask.)

12. Recorded Interview with Mr. William Slemko, describing the Parferi Tkachuk dug-out, Radomir Bilash, January 31, 1980.

13. Eurchuk, "Zhinochi doli," (Sask.).
Personal Interview with Mr. Mike Rusnak, describing a similar excavation for an old country burdei, Andriy Nahachewsky, June 16, 1983.

14. Telephone Interview with Mrs. Verna Topolnisky, Andriy Nahachewsky, July 25, 1983.

15. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.
Mr. Zazula maintained that most burdei in the Shandro area were built on flat land only because there were few hills in the area.

16. Personal Interview with Mrs. Sachkiw, Andriy Nahachewsky, June 14, 1983.

17. Personal Interview with Mr. Nick Cebuliak, Andriy Nahachewsky, July 28, 1983.

18. Personal Interview with Mr. William Herasym, Demjan Hohol, June 16, 1983.

19. Personal Interview with Mr. John Archiniuk, Demjan Hohol, June 8, 1983.

20. Personal Interview with Mr. Paul Ruptash, Demjan Hohol, June 8, 1983.
Recorded Interview with Mr. William Slemko describing the P. Tkachuk dug-out, Radomir Bilash, January 31, 1980.
Personal Interview with Mrs. Zazula, describing the Stefan Shandro dug-out, Andriy Nahachewsky, September 7, 1983.

21. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

22. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983. He specifically associated this feature to his discussions with a Mrs. Shewchuk.

23. Peter Svarich. "Do pytannia rozvytku i postupu v materiialnii kulturi ukrainskykh poselentsiv u Kanadi," Zbirnyk na poshanu Zenona Kuzeli, ed., Volodymyr Janiw, (Paris: Naukove Tovarystvo Im. Shevchenka, 1962) p. 151.

24. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich dug-out, Andriy Nahachewsky, August 2, 1983.

25. Personal Interview with Mr. Nick Cebuliak, describing the Dmyterko dug-out, Andriy Nahachewsky, July 28, 1983.

26. See Figure 7.

27. M. M. Strishenets. "Sotsialnyi stan, hospodarstvo i zhytlo rudnykiv Ukrainy XVI-XVIII st.," NTE no. 1 (1979), p. 65.

28. Prykhodko, "Do pytannia," p. 52.

3. Walls

29. As in the Lazhovsky case.

30. Personal Interview with Mr. Nick Cebuliak, Andriy Nahachewsky, July 28, 1983.

4. Structural Framework

31. A svolok is a "beam which holds up the ceiling in buildings, a horizontal beam in certain structures." Slovnyk ukrainskoi movy, 1972 ed., s.v. "Svolok."

32. Personal Interview with Mr. John Archiniuk, Demjan Hohol, June 7, 1983.

33. Recorded Interview with Mr. William Slemko, describing the P. Tkachuk burdei, Radomir Bilash, January 31, 1980. The term ligar may have referred to a different type of beam in this case.

34. Personal Interview with Mrs. Hafia Janishevski describing the Svarich buda, Andriy Nahachewsky, August 2, 1983.

35. From the English "log."

36. Eurchuk, "Zhinochi doli," (Sask.).

37. Cases in which the structures were not tall enough to stand in have also been recorded. These, however, have been classified under the primitive type of temporary dwelling.

38. The last term powst is derived from the English "post."

39. Eurchuk, "Zhinochi doli," (Sask.).

40. Term used in Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky buda, Andriy Nahachewsky, September 7, 1983.

41. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

42. Recorded Interview with Mr. William Zabrick, Mr. George Semeniuk and Andriy Nahachewsky, July 28, 1983.

43. Such a structure is indicated in the description of the Svarich buda (Personal Interview with Hafia Janishevski, Andriy Nahachewsky, August 2, 1983.) Mrs. Janishevski was very clear in her description of the front door frame and cross piece (poperek), however she was not successful in describing the beam (brus) or beams and back posts. At various points in the interview her descriptions suggested one, two or even three posts in the back.

44. A third example may exist in the burdei illustrated in Figure 89 which was published with Peter Svarich's article on the early material culture of Alberta's Ukrainian immigrants. It may, in fact, be the Svarich dug-out itself, described specifically by his younger sister, Mrs. Hafia Janishevski. (See endnote 43.)

45. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 17, 1983.

46. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich buda, Andriy Nahachewsky, August 2, 1983.

47. The diagram is taken from Mrs. Janishevski's sketch during this same interview.

48. A. H. Danyliuk. "Davni hospodarski budivli na Polissi," NTE no. 3 (1978), pp. 62-63.

49. Telephone Interview with Mr. Harry Sawchyn, Andriy Nahachewsky, June 8, 1983.

50. Telephone Interview with Mrs. Zonia Shevelop, describing the Socholotoski dug-out, Andriy Nahachewsky, June 16, 1983.

51. From druk - a large thick wooden stick. (Slovnyk ukrainskoi movy).

52. Long thin sticks or poles. (Slovnyk ukrainskoi movy).

53. From zherdyna - a long thin piece of wood stripped of branches. (Slovnyk ukrainskoi movy).

54. Rafters.

55. Eurchuk, "Zhinochi doli," (Sask.).

56. Personal Interview with Mr. John Archiniuk, Demjan Hohol, June 7, 1983.

57. Personal Interview with Mr. Nick Cebuliak, describing the Dmyterko dug-out, Andriy Nahachewsky, July 28, 1983.

58. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

59. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich buda, Andriy Nahachewsky, August 2, 1983.

5. Gable Walls

60. Slovnyk Ukrainskoi movy, s. v. "Prychilka." The word is found in Svarich, "Do pytannia."

61. Recorded Interview with Mrs. Anna Zailo, describing the Lazhovsky buda, Andriy Nahachewsky, September 7, 1983. Fasiad is likely related to the English "facade."

62. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

63. Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky structure, Andriy Nahachewsky, September 7, 1983.

64. Kosmina. Silske, p. 25. Note the description of "stina na stovpakh z killiam, opletenym horyzontalno khvorostom" [a wall of posts and stakes, woven with horizontal brushwood.] Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983. Mr. Zazula described this type of wall construction in reference to dirt covered structures called zemlianky in Bukovyna. Those particular zemlianky were not subterranean.

6. Roofing Materials

65. Eurchuk, "Zhinochi doli," (Sask.).

66. Personal Interview with Mr. William Herasym, Demjan Hohol, June 16, 1983.

67. Eurchuk, "Zhinochi doli," (Sask.).

68. Ibid.

69. Recorded Interview with Mrs. Kay Grakul, describing the Lepatsky burdei, Andriy Nahachewsky, July 3, 1983.
Telephone Interview with Mr. Nick Zukiwski, pertaining to the Shemko dug-out, Andriy Nahachewsky, August 3, 1983.

70. Telephone Interview with Mr. Nick Zukiwski, describing the Shemko dug-out, Andriy Nahachewsky, August 3, 1983.

71. Telephone Interview with Mrs. Zonia Shevelop, describing the Socholotoski dug-out, Andriy Nahachewsky, July 25, 1983.
Personal Interview with John Archiniuk, Demjan Hohol, June 7, 1983.

72. Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky buda, Andriy Nahachewsky, September 7, 1983.

73. Personal Interview with Mr. John Archiniuk, Demjan Hohol, June 7, 1983.

74. Eurchuk. "Zhinochi doli," (Sask.).

75. Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky buda, Andriy Nahachewsky, September 7, 1983.

76. See below, on exterior wood.

77. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

78. Recorded Interview with Mr. William Slemko describing the P. Tkachuk dug-out, Radomir Bilash, January 31, 1980.

79. As described in Chapter I and in O. Dovzhenko, Tvory v triokh tomakh, Vol. 1, (Kiev: Derzhlitvydav, 1958), p. 228.

80. Entsiklopedicheskii slovar, s.v. "Zemlianka."

81. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

82. Recorded Interview with Mr. William Slemko, describing the P. Tkachuk dug-out, Radomir Bilash, January 31, 1980.

83. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

84. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.
Telephone Interview with Mrs. Zonia Shevelop, pertaining to the Natchuk and Socholotoski sites, Andriy Nahachewsky, June 16, 1983.

85. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich dug-out, Andriy Nahachewsky, July 29, 1983.

86. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

87. Welsch, Sod Walls, p. 50.

88. Recorded Interview with William Slemko, describing the P. Tkachuk dug-out, Radomir Bilash, January 31, 1980.
Recorded Interview with Mr. William Zabrick, George Semeniuk and Andriy Nahachewsky, July 28, 1983.

89. Personal Interview with Mr. John Archiniuk, Demjan Hohol, June 7, 1983.

90. Telephone Interview with Mrs. Sophie Malayko, Andriy Nahachewsky, July 19, 1983.

91. Personal Interview with Mr. John Archiniuk, Demjan Hohol, June 7, 1983.
The photograph in Figure 27 is not extremely clear. It is possible that the area above the door has been covered with a blanket or a coat.

92. Personal Interview with Mr. Nick Cebuliak, describing the Dmyterko dug-out, Andriy Nahachewsky, July 28, 1983.

93. See Figures 59, 60, 71 and 77.

94. Kosmina, Silske, p. 38.

95. "Zukiwski" biography (dealing with their maternal relatives), Dreams and Destinies, p. 636.

96. Interviews have been conducted with a grandson of the builder, Mr. Nick Zukiwski. Mr. Nick Zukiwski has conferred with his mother on the subject.

97. S. Taranushchenko. "Davnie poliske zhytlo," NTE, vol. no. 1 (1969), p. 9.

98. A reference to this is made in connection with a log-wall burdei in the Hushulak biography, Dreams and Destinies, p. 384. This may certainly also apply to dug-outs of the principal type.

99. Recorded Interview with William Zabrick, George Semeniuk and Andriy Nahachewsky, July 28, 1983.
Personal Interview with an anonymous man from Bila Tserkva, Smoky Lake Foundation Bar-V-nok, Andriy Nahachewsky, June 16, 1983.

7. Entrance

100. Canadian Climate: Wind. (Downsview, Ontario: Environment Canada Climate Publications, 1982), p. 40. The wind chart for Edmonton indicates that the north-east wind occurs at the highest percent frequency in January and February. The north-west wind is most frequent in the summer.

101. Lehr, Ukrainian Vernacular, p. 11.

102. Personal Interview with Orest Zubrytsky, discussing the Pawliuk site, Andriy Nahachewsky, August 31, 1983.

103. Even with this orientation, the addition of the second entranceway in one of the structures makes it possible that both structures had a south facing door.

104. Schmieder, Kirchenblatt, (Sask. Ukr?).

105. Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky structure, Andriy Nahachewsky, September 7, 1983.

106. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

107. The Ukrainian words were used in a Personal Interview with Mrs. Zazula pertaining to the N. Shandro burdei, Andriy Nahachewsky, September 7, 1983, in Svarich, "Do pytannia," p. 151, and in a recorded Interview with Mrs. Anne Zailo, discussing the Lazhovsky buda, Andriy Nahachewsky, September 7, 1983.

108. Eurchuk, "Zhinochi doli," (Sask.).

109. Personal Interview with Mrs. Chmilar, describing the Osinchuk dug-out, Andriy Nahachewsky, June 14, 1983.

110. Telephone Interview with Mrs. Zonia Shevelop, discussing the Natchuk dug-out, Andriy Nahachewsky, June 16, 1983.

111. Svarich, "Do pytannia," p. 151.

112. A German named Mr. Friezer had a sawmill on the river flats at Edmonton by 1900. (Personal Interview with Mrs. Hafia Janishevski, discussing the Svarich buda, Andriy Nahachewsky, August 2, 1983).
A Ukrainian, Mr. Melenka built a waterpowered trachka near Pakan before 1901 (Ibid.), while another opened at Jackpine, near Edwand, in 1904. (Personal Interview with Mr. Nick Cebuliak, Andriy Nahachewsky, July 28, 1983.)

113. Personal Interview with Mr. Nick Cebuliak pertaining to the Dmyterko dug-out, Andriy Nahachewsky, July 28, 1983.

114. Schmieder, *Kirchenblatt*, (Sask. Ukr.?).

115. Eurchuk, "Zhinochi doli," (Sask.).

116. Personal Interview with Mrs. Daria Woitkiw, discussing the Osinchuk dug-out dwelling, Andriy Nahachewsky, June 14, 1983.

117. Ibid.

118. Personal Interview with an anonymous man from Bila Tserkva, Smoky Lake Foundation Bar-V-nok, Andriy Nahachewsky, June 16, 1983. This man was describing a *kurin* as built in the central regions of Ukraine.

119. Personal Interview with Mrs. Verna Topolnisky, describing the Tokaruk dug-out, Andriy Nahachewsky, August 4, 1983.

120. Ibid.

121. Recorded Interview with Mr. William Slemko, discussing the P. Tkachuk dug-out, Radomir Bilash, January 31, 1983.

122. Personal Interview with Mr. Nick Cebuliak describing the Dmyterko dug-out, Andriy Nahachewsky, July 28, 1983.

123. Eurchuk, "Zhinochi doli," where she describes the *siny* of the Mykola Boichuk *burdei*, (Sask.). Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

124. Prykhodko, "Do pytannia," p. 52.

8. Windows

125. Recorded Interview with Mrs. Anne Zailo, discussing the Lazhovsky case, Andriy Nahachewsky, September 7, 1983.

126. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

127. Eurchuk, "Zhinochi doli," (Sask.). Personal Interview with Mrs. Hafia Janishevski describing the Svarich dug-out, Andriy Nahachewsky, August 2, 1983.

128. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

129. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, July 28, 1983.

130. Ibid.

131. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

132. Personal Interview and diagram drawn by John Archiniuk, Demjan Hohol, June 7, 1983.

133. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

134. Personal Interview with Mr. Nick Cebuliak, describing the Dmyterko dug-out, Andriy Nahachewsky, July 28, 1983.

135. Personal Interview with Mrs. Verna Topolnisky, describing the Tokaruk site, Andriy Nahachewsky, August 4, 1983.
Personal Interview with Mrs. Hafia Janishevski, describing the Svarich dug-out, Andriy Nahachewsky, August 2, 1983.

9. Heating and Cooking

136. Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky structure, Andriy Nahachewsky, September 7, 1983.

137. Personal Interview with Mrs. Hilkow, Andriy Nahachewsky, June 14, 1983.

138. Telephone Interview with Mr. Nick Zukiwski, describing his father's immigration, Andriy Nahachewsky, August 3, 1983.
Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

139. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

140. Recorded Interview with Mrs. Kay Grakul, describing the Lepatsky dug-out, Andriy Nahachewsky, July 3, 1983.

141. Personal Interview with Mr. John Archiniuk, Demjan Hohol, June 15, 1983.

142. Ibid.

143. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich dug-out, Andriy Nahachewsky, August 2, 1983.
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144. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich dug-out, Andriy Nahachewsky, August 2, 1983.

145. Telephone Interview with Mr. Nick Zukiwski, describing the Shemko dug-out, Andriy Nahachewsky, August 3, 1983.

10. Smoke Ventilation

146. Kosmina, Silske, p. 62.

147. Sopolyha, "Prostoralne planuvannia," p. 122.

148. Personal Interview with Mrs. Phyllis Pawliuk, Andriy Nahachewsky, August 26, 1983.
Poem recited by Mrs. Josephine Sachkiw, Andriy Nahachewsky, June 14, 1983.

149. The only case in which such a situation seems at all likely is the Hilkow case. Personal Interview with Mrs. Hilkow, Andriy Nahachewsky, June 14, 1983.

150. Recorded Interview with Mrs. Anne Zailo, describing the Lazhovsky buda, Andriy Nahachewsky, September 7, 1983.

151. Ibid.

152. Ibid.

153. Personal Interview with Mr. Nick Cebuliak, Andriy Nahachewsky, July 28, 1983.

154. Personal Interview with Mr. John Archiniuk, Demjan Hohol, June 15, 1983.

11. Interior Finishing

155. Recorded Interview with Mrs. Kay Grakul, describing the Lepatsky burdei, Andriy Nahachewsky, July 3, 1983.

156. Kosmina, Silske, p. 17.

157. Personal Interview with Mr. Wasyl and Mrs. Anna Zazula, Andriy Nahachewsky, September 7, 1983.

158. Ibid.

159. Ibid.

160. Personal Interview with Mr. Nick Cebuliak, Andriy Nahachewsky, July 28, 1983.

161. Eurchuk, "Zhinochi doli," (Sask.).

162. Personal Interview with Mr. John Archiniuk, Demjan Hohol, June 15, 1983.
Recorded Interview with Mr. William Slemko, discussing the P. Tkachuk dug-out, Radomir Bilash, January 31, 1980.

163. Kosmina, _Silske_, p. 38.

164. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.

12. Interior Plan

165. Kosmina, _Silske_, p. 48.

166. Sopolyha "Prostoralne planvannia," p. 122.

167. Eurchuk, "Zhinochi doli," (Sask.). The description of the _siny_ or _khoromy_ is actually contained in a passage describing the _burdei_ of her neighbour Mykola Boichuk. The author claims that her husband and brother-in-law built a similar dug-out for themselves.

168. Prykhodko, "Do pytannia," p. 53.

169. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich _buda_, Andriy Nahachewsky, August 2, 1983.

170. These considerations were noted during a Personal Interview with an anonymous man from Bila Tserkva in Smoky Lake Foundation, Bar-V-nok, Andriy Nahachewsky, June 16, 1983. His comments referred to _kurini_ in central Ukraine, though they apply to any such dwelling.

171. Telephone Interview with Mrs. Zonia Shevelop, describing the Natchuk dug-out, Andriy Nahachewsky, June 16, 1983.

172. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich structure, Andriy Nahachewsky, August 2, 1983.
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173. Schmieder, Kirchenblatt, describing the Beresina dwellings (Sask. Ukr?).

174. Personal Interview with Mr. John Archiniuk, Demjan Hohol, June 7, 1983.

175. Lehr. Ukrainian Vernacular, p. 21.

176. Personal Interview with Mr. and Mrs. Zazula describing the N. Shandro burdei, Andriy Nahachewsky, September 7, 1983.

177. Personal Interview with Mrs. Daria Woitkiw, describing the Osinchuk dwelling, Andriy Nahachewsky, June 14, 1983.

178. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich dug-out, Andriy Nahachewsky, August 2, 1983.

179. Personal Interview with Mrs. Zazula describing the N. Shandro dug-out, Andriy Nahachewsky, August 1, 1983.

180. Recorded Interview with Mrs. Kay Grakul, discussing the Lepatsky dug-out, Andriy Nahachewsky, July 3, 1983.

181. Personal Interview with Mr. John Archiniuk, Demjan Hohol, June 7, 1983.

182. As in the Lazhovsky case.

183. Personal Interview with Mr. Wasyl Zazula, Andriy Nahachewsky, September 7, 1983.
Schmieder, Kirchenblatt, discussing the Berezina structures. (Sask. Ukr?).

184. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich dug-out, Andriy Nahachewsky, August 2, 1983.

185. Svarich, "Do rozvytku," p. 151.

186. Recorded Interview with Mrs. Kay Grakul, discussing the Lepatsky dug-out, Andriy Nahachewsky, July 3, 1983.

187. Personal Interview with Mr. Paul Ruptash, Demjan Hohol, June 8, 1983.

188. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich history, Andriy Nahachewsky, August 2, 1983.

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191. Svarich, "Do pytannia," p. 151.

192. Personal Interview with Mrs. Hafia Janishevski, describing the Svarich dug-out, Andriy Nahachewsky, August 2, 1983.

Sample Structures

193. See Figure 73.

194. As cited previously.

195. This passage is not clear in the informant's description.

196. This passage is not clear for the informant's description.

B. Primitive Type

197. Personal Interview with Mr. Lackey, Andriy Nahachewsky, August 1, 1983.

198. I.A. P. "Teper i kolys," p. 473.

199. Translation by Andriy Nahachewsky.

200. This feature was present in the P. Pawliuk and the Sydor cases. It suggests that these structures were also quite primitive.

201. Personal Interview with Mrs. Josephine Sachkiw, Andriy Nahachewsky, June 14, 1983.

C. Deep-Hole Type

202. Telephone Interview with Mrs. Lillian Semeniuk, discussing the M. Tkachuk dug-out, Andriy Nahachewsky, July 26, 1983.
Personal Interview with Mrs. Verna Topolnisky, describing the Tokaruk structure, Andriy Nahachewsky, August 4, 1983.

203. Personal Interview with Mr. Sam Kitz, Andriy Nahachewsky, July 24, 1983.

204. Personal Interview with Mr. Tom Trefanenko describing the Huculak dug-out, Andriy Nahachewsky, August 4, 1983.

205. Personal Interview with Mrs. Verna Topolnisky, describing the Tokaruk dug-out, Andriy Nahachewsky, August 4, 1983.

206. Personal Interview with Mrs. Kurylo, describing the Nimchuk iama, Andriy Nahachewsky, July 26, 1983.

207. Personal Interview with Mr. Alex Tkachuk, describing the M. Tkachuk iama, Andriy Nahachewsky, July 26, 1983.

208. Ibid.

209. Personal Interview with Mr. Mike Rusnak, Andriy Nahachewsky, June 16, 1983.

210. Oringderff, True Sod, p. 33.

211. Personal Interview with Mrs. Verna Topolnisky, describing the Tokaruk dug-out, Andriy Nahachewsky, August 4, 1983.

212. Personal Interview with Mr. Tom Trefanenko, describing the Huculak dug-out, Andriy Nahachewsky, August 4, 1983.

213. Ibid.

214. Personal Interview with Mrs. Verna Topolnisky, describing the Tokaruk case, Andriy Nahachewsky, August 4, 1983.

D. Log-Wall Type

215. Recorded Interview with Mrs. Ramona Walker, describing the Swyschuk structure, Andriy Nahachewsky, July 9, 1983.
Recorded Interview with Mr. William Slemko, describing the P. Tkachuk dug-out, Radomir Bilash, January 31, 1980.

216. Personal Interview with Mr. George Danelesko, describing the Danelesko-2 structure, Andriy Nahachewsky, August 4, 1983.

217. Figure 99 of the Yushko interior.

218. Recorded Interview with Mrs. Verna Znak, describing the Iwaschuk structure, Andriy Nahachewsky, June 9, 1983.

219. Ibid.

220. Kosmina, Silske, p. 17.

221. Ibid., pp. 19-20.

222. Lehr, Ukrainian Vernacular, p. 7.

223. Recorded Interview with Mrs. Verna Znak, describing the Iwaschuk buda, Andriy Nahachewsky, June 9, 1983.

224. Ibid.

225. Personal Interview with Mrs. Ramona Walker, describing the Swyschuk dug-out, Andriy Nahachewsky, July 9, 1983.

226. Welsch, Sod Walls, p. 63-65, Oringderff, True Sod, p. 43.

227. Recorded Interview with Mrs. Anne Zailo, describing the second Lazhovsky dwelling, Andriy Nahachewsky, September 7, 1983.

228. Personal Interview with Mrs. Mary Boyko, describing the Shipko kempa, Andriy Nahachewsky, June 14, 1983.

229. Recorded Interview with Mrs. Verna Znak, describing the Iwaschuk buda, Andriy Nahachewsky, June 9, 1983.

230. Ibid. Note also the 20 cm covering of the Prykhodko napivzemlianka, described in Chapter I.

231. Personal Interview with Mrs. Mary Boyko, describing the Shipko structure, Andriy Nahachewsky, June 14, 1983.

232. Ibid.

233. Personal Interview with Peter and Elsie Rybak, describing the Serna dug-out, Demjan Hohol, June 8, 1983.

234. Recorded Interview with Mr. William Slemko, describing the P. Tkachuk dug-out, Radomir Bilash, January 31, 1980.

235. "Hushulak, Wasyl" biography, Dreams and Destinies, p. 384.

236. Personal Interview with Mr. Nick Kupchenko, describing the Basaraba burdei, Demjan Hohol, June 9, 1983.

237. Personal Interview with Mrs. Anne Zailo, describing the second Lazhovsky dwelling, Andriy Nahachewsky, September 7, 1983.

238. Lehr, Ukrainian Vernacular, p. 14.

239. Figure 99 of the Yushko ceiling.

240. Eurchuk, "Zhinochi doli," (Sask.).

241. Figure 99.

242. Ibid.

243. Eurchuk, "Zhinochi doli," (Sask.).

244. Personal Interview with Mr. George Danelesko, describing the Danelesko 2 structure, Andriy Nahachewsky, August 4, 1983.

245. Personal Interview with Mrs. Kurylo, Andriy Nahachewsky, June 14, 1983.

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248. Alex Hushulak, "Hushulak, Wasyl" biography, Dreams and Destinies, p. 384.

249. Figure 100 of the Yushko interior.

250. Personal Interview with Mr. George Danelesko, Andriy Nahachewsky, August 4, 1983.

251. Personal Interview with Mrs. Mary Boyko, describing the Shipko structure, Andriy Nahachewsky, June 14, 1983.

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254. Telephone Interview with Mr. Henry Sawchyn (Sask.), Andriy Nahachewsky, June 7, 1983.

255. Recorded Interview with Mrs. Verna Znak, describing the Iwaschuk structure, Andriy Nahachewsky, June 15, 1983.
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257. Chapter I.

258. Personal Interview with Mrs. Kurylo, Andriy Nahachewsky, June 14, 1983.

Chapter VI: Conclusion

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Dug-out dwellings constituted an important aspect of the life of the earliest Ukrainian immigrants to east-central Alberta. Before the turn of the century, practically every pioneer in this territory either lived in a dug-out or knew of others who did. Temporary dwellings were built in a wide variety of forms. The most characteristic and prominent type of temporary dwelling was the Slanted-Roof dug-out. An idealized model may serve to illustrate the most representative features of this type of structure. For this purpose a hypothetical case has been composed. The model is set at the turn of the century, and occupied by a family of four for a period of two years. The family had moved onto this land soon after arriving in Alberta.

The burdei site was selected at the end of a wooded area, not far from the boundary line of the property. A neighbour's dwelling was situated nearby on the adjacent quarter section. The structure was built near the top of a rise in the terrain, where the land was descending slightly to the south. A spring or creek flowed in a lower area not far away.

The immediate vicinity of the structure was cleared of trees and brush. Firewood was piled in a designated spot near the boundary of the clearing. A fire, used for cooking and as a smudge, burned in its pit six to eight meters from the structure. A garden was cleared and planted in a level spot between the dwelling and the water source. In another direction a cow was tethered to a stake in the ground. Hay and grass were gathered and piled in a designated spot to feed the livestock through the winter.

A hole dug for the structure measured three by four meters, its major axis directed north and south. The excavation averaged .75 m in depth; deeper in the north end to compensate for the rising hill, and conversely shallower in the south end. An earthen step was left intact across the south end of the excavation. The landing was twenty five cm tall and thirty cm long.

The frame of the structure consisted of two vertical posts and a longer horizontal cross bar. The posts were forked on top, and were emplanted vertically beyond the north and south ends of the dug-out. The crossbeam was mounted in the forks, suspended approximately two meters above the interior floor. These three structural logs were twenty cm or more in diameter.

Thinner rails were leaned from beyond either side of the hole onto the main beam. The rails were arranged side by side and covered the structure from end to end on both sides. The rails were selected hastily, and therefore varied in diameter and straightness. Branches had been removed, though most of the bark remained intact. The rails extended up as far as the beam, and sometimes protruded beyond it. Poplar, for the most part, was used in the frame and the rails.

A layer of tall prairie grasses was piled over the roof rails to create a solid surface for the earth and sod. Once the grass layer was in place, the base of the structure was mounded with earth and clay. Sod strips, measuring approximately twenty cm by forty cm, and ten cm thick, were laid over the upper areas of the structure. The sod pieces were laid side by side onto the inclining roof in two layers placed grass side up. Vegetation continued to grow on the sod. Stalks of grass eventually sprouted on the earthen mounds as well, though the clay had been packed hard.

The north and south walls were triangular in shape, formed by the slanting rails on each side. A door was located in the south gable to the east side of the central post. The remainder of each gable area was filled by a row of vertical poles. These rails were coated inside and out with several layers of mud plaster--clay and water mixed with straw and dung.

The central post on the south wall served as a door jamb. The other jamb was made simply by securing a horizontal pole into the ground and to the rails at the top. The door jambs were approximately sixty cm apart. The lintel consisted of a short pole tied horizontally between the jambs at the top. The door itself was constructed of four or five rough boards, hewed for this purpose. These were pegged to horizontal crosspieces, which in turn were hinged to the central post. Strips of leather served as doorhandles on the interior and exterior of the door.

One pane of glass, measuring twenty by twenty five cm was mounted above the lintel. Small, odd sized boards and branches were used to frame the glass and fill in the remaining triangular areas in the wall. These were also plastered over to seal off any remaining holes. A second window, of approximately the same dimensions, was mounted in a similar position, west of center in the north gable. The posts in this space had been specially shortened for this purpose. This windowframe was also made of small boards, nailed to the central beam and supported by the adjacent poles and plaster.

Inside, a clay stove (shparhat) was built into the northwest corner of the structure. Its walls were roughly rectangular in shape. A metal top surface, stove door and chimney were bought for the shparhat. The chimney extended up from the top of the shparhat, elbowed 90 degrees to the east, then redirected vertically again to pass through the roof and beyond. The hole in the roof was insulated with clay to protect the flammable wood and grasses from the heated pipe.

The floor and wall surfaces of the burdei consisted of the natural clay and earth which had been exposed during excavation. Loose earthen areas were reinforced as necessary with patches of clay and plaster. The entire floor and walls were tamped to produce a cleaner, smoother surface. Areas of heavy traffic became more compressed with use. On the interior surfaces of the roof the inclining structural rails and the central beam were exposed.

The interior of the dug-out dwelling was furnished with a rail bed in the north east corner, and a table made of rails and boards along the west wall. A trunk and other articles were stored along the east wall and in the southwest corner.

The construction of these burdei or budy can be perceived in relation to at least two important factors. The first of these is in fact that the structures reflected a strong continuity with similar forms found in the folk architecture of Ukraine. The second factor lies in the vital principle that, as folk architecture, these structures were strongly influenced by the circumstances peculiar to their unique context -- the developing Canadian prairie.

Similar structures have been common and even prevalent in dwelling-place architecture on Ukrainian territory since early prehistoric times. Throughout the course of history, even up to the nineteeth and twentieth centuries, pit houses were used in various specific contexts; in isolated areas; as temporary shelters; and by the impoverished. The industrial expansion of the nineteenth century created an environment in which such conditions were common, and the use of zemlianky increased correspondingly. The environment of western Canada evoked a similar response at the turn of the century. Thousands of villagers found themselves unsettled, poor and isolated. The construction of the dug-out structures can be interpreted as a traditional solution to such problems on the part of these people. Continuity in form is suggested by the structural evidence.

In several respects, however, the early industrial era in Ukraine differed from that of Alberta. The Canadian settlers built their burdei in a rural environment and often in extreme isolation. They did not leave their dwelling to go to work, but spent all their time and energy working on their own property. Processed building materials and tools were not always easily accessible, though raw wood, sod and clay were plentiful and free. Construction techniques were adapted to the available materials, and often to match the limited skill of the isolated builder.

The influence of non-Ukrainian architectural techniques was minimal at first, though it increased with time. The incidence of flat roofs was likely greater in Canada than in the Old Country, and continued to increase. North American materials and tools were bought and used except where European supplies had been transported and remained intact.

Canadian materials represented in the typical model were windows, door hinges, nails and metal stove components.

The era of the dug-out dwelling ended as Alberta became more populated, materials became more available, and other options for accommodations arose. Before that time, however, these temporary shelters had made their mark as a significant aspect of early Albertan life.

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- i) Telephone Interview by Andriy Nahachewsky, August 31, 1983.

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ii) Telephone Interview by Demjan Hohol, June 27, 1983.

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Nedoshytko, W.
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ii) Telephone Interview by Andriy Nahachewsky, July 16, 1983.
iii) Telephone Interview by Andriy Nahachewsky, July 18, 1983.

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iii) Telephone Interview by Andriy Nahachewsky, August 19, 1983.
iv) Personal Interview by Andriy Nahachewsky, August 26, 1983.

Popil, Marie
i) Telephone Interview by Andriy Nahachewsky, August 16, 1983.
ii) Telephone Interview by Andriy Nahachewsky, August 29, 1983.

Prokopiw, Peter
    i) Personal Interview by Andriy Nahachewsky, July 11, 1983.

Romanchuk, Metro
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Ruptash, Paul
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    ii) Personal Interview by Demjan Hohol, June 8, 1983.

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    i) Personal Interview by Demjan Hohol, June 4, 1983.

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    i) Telephone Interview by Andriy Nahachewsky, June 10, 1983.
    ii) Personal Interview by Andriy Nahachewsky, June 15, 1983.

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    ii) Personal Interview by Andriy Nahachewsky, July 28, 1983.

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    i) Telephone Interview by Andriy Nahachewsky, June 16, 1983.

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- ii) Personal Interview by Demjan Hohol, August 2, 1983.

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- i) Telephone Interview by Andriy Nahachewsky, July 26, 1983.

Topolnisky, Verna
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- ii) Personal Interview by Andriy Nahachewsky, August 4, 1983.

Towpich, Mrs.
- i) Personal Interview by Demjan Hohol, June 8, 1983.

Trefanenko, Tom
- i) Personal Interview by Andriy Nahachewsky, August 4, 1983.

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Unidentified man
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- ii) Telephone Interview by Andriy Nahachewsky, September 6, 1983.
- iii) Recorded Interview by Andriy Nahachewsky, September 7, 1983.

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- i) Personal Interview by Andriy Nahachewsky, August 1, 1983.
- ii) Personal Interview by Andriy Nahachewsky, September 7, 1983.

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- ii) Personal Interview by Andriy Nahachewsky, September 7, 1983.

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- ii) Telephone Interview by Demjan Hohol, July 4, 1983.
- iii) Telephone Interview by Andriy Nahachewsky, August 16, 1983.
- iv) Telephone Interview by Andriy Nahachewsky, August 29, 1983.
- v) Personal Interview by Andriy Nahachewsky, August 31, 1983.

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- ii) Telephone Interview by Andriy Nahachewsky, August 3, 1983.

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- ii) Telephone Interview by Andriy Nahachewsky, July 26, 1983.

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Addendum

Addendum

A. Early Rural Architecture in Alberta

Wood frame structures were very rare in rural east central Alberta until after 1905, and even after that time they were often left unfinished and were difficult to heat. Because of their urban use, however, frame houses were generally considered to be prestigious. Dwellings made of logs[1] or sod[2] were much more common.

Construction of a log house required a degree of skill and experience on the part of the builder. Spruce was the preferred species of tree for log construction, since it grew tall and straight. White and black poplar, however, were much more common in most areas. After a log was felled and trimmed, it was placed on a level skidway and allowed to roll to its natural resting position, with any bulge or bow hanging downward. It was notched in this position, then turned upside down so that the notches fit onto the underlying log, and the warp of the log faced directly upward. Gravity would tend to straighten the log. Though the space between logs was to be minimal, it was important that the weight of the logs rested only at the corners to secure the joints. The two principal methods of notching the logs at the corners were dovetailing and saddling. A number of variants of this building process existed among the various builders and regions. Windows and doors were sawn out afterwards.[3]

Roofs were most commonly built of sod and clay,[4] though sometimes of shingles,[5] and occasionally of spruce bark[6] or simply earth piled over a layer of straw.[7] Triangular gables were built onto two walls, and long poles were suspended longitudinally from gable to gable. A central wall in the interior could help support these poles and reduce their span. Shorter roof poles extended from the plates (top log of each wall) to the ridgepost at the peak. This framework was nailed or pegged in place if the pitch of the roof was steep, or was held in place by the weight of the roof covering if the pitch was shallow. When covered with sod, a horizontal pole would run along the eaves of the roof to hold the sod from sliding off.[8]

Though log houses were the most common form of dwelling, sod houses were also well known in east central Alberta at the turn of the century. This type of structure was largely introduced by Americans moving north during Canada's first decades. They were built when suitable trees were unavailable in the immediate vicinity. Sod houses, when built by an experienced man, could be very strong and warm, though the majority of immigrants knew few of the skills before actually undertaking construction.[9]

Most sod houses were built above ground, though the practice of digging them into the ground was not unknown. Sod strips were ripped from level prairie with a breaking plow, then hauled to the site and piled like bricks to make walls. Wooden frames had to be pre-set for the door and windows. The top plate of these was specifically important since it bore the weight of any subsequent sod layers.

A series of posts generally supported the frame of the roof. This frame consisted of a central ridgepole and parallel plates above the long walls. Thin poles were secured to the peak of the roof and to these plates. This framework was covered by a thick layer of slough hay, then sods and clay. The walls eventually settled a few inches, and all cracks and spaces had to be stuffed with rags and paper.

When the walls were complete, earthen banks were sometimes piled against them to make the structure even more insulated and wind-proof, as well as to improve drainage.

The interiors of soddies and log houses consisted of one or two rooms. Furnishings varied according to the possessions of the settlers. Many items were homemade and improvised.[10]

B. Water Supply

In the first days after arrival, Ukrainian immigrants to east central Alberta obtained their water from the nearest creek or spring. Open water, however, was considered undesirable for drinking water, and a well (kyrnytsia) was dug early in the development of the homesteads. Well water was filtered through sand and rock, and therefore cleaner than surface water.

Wells were located not far from creeks or lakes, where the depth of the water table was not difficult to estimate. Proximity to the dwelling was also a factor in selecting a well site, since water had to be hauled up to the burdei daily or several times each day. Wells were dug by hand with a shovel (ruskal). They varied in depth from less than two meters[11] to nearly nine meters.[12] The majority of wells, however, were approximately three meters deep.

The walls of the hole were usually left unsupported. A frame of rails was built over the top of the well to keep the water clean and prevent animals and children from falling in.[13] Water was drawn up with a pail tied to a rope. In some cases, the pail (konowka) was wooden, bought from Europe,[14] though in other cases a metal pail was bought in Alberta.[15]

A second, deeper well was sometimes dug at a later date. A deeper well would be less likely to dry out, could supply cleaner water, and could possibly be situated in a better location.[16]

C. Animal Shelters

Farm animals were an important part of the developing homestead. A cow was bought immediately upon arrival to the homestead[17] or as soon as the family could afford it.[18] In certain cases, one animal was shared between two or more families.[19] Milk from one cow was divided among as many as seven families in the earliest period.[20]

Oxen were the primary draft animals used in the pioneering era[21] though horses were also used by more affluent settlers.[22] Homesteaders who could not afford to buy their own draft animals would hire out their neighbour's for the heaviest work.

Livestock, in many cases, was left to pasture freely in the summer. If the animals strayed too far, they would be herded back to the homestead, though cows often returned on their own at milking time.[23] The practice of leaving livestock to graze freely was known in Western Ukraine, in sparsely populated areas.[24] This practice, however, was impossible in most areas of Ukraine because of the problem of tresspassing and damaging a neighbour's property. Even in the isolated Alberta context, the garden needed to be protected from the cattle. In some cases, this necessitated constant tending of the livestock. An alternative method was tying the animals to a tree or some other secured post. A fenced in area (grazhda) was built to retain the livestock as necessary.[25]

During the summer, livestock could shelter itself under trees during the rain. In the winter, however, some sort of shelter was built. Shelters for cattle were built in much the same form as the burdei itself. The animal shelter was also called a burdei[26] or a buda[27] in these cases. The livestock shelter was not excavated, since cattle would shun descending into a hole. It was built as large as necessary to house the animals. A two-post frame supported the roof. The slanting roof rails were covered first with a layer of hay, then with earth, sod, and/or more rails to shield the animals at least partially from wind, rain and cold. Rails were secured with rope, twisted branches, or wooden pegs. A roof had to be heavy and secure enough to prevent it from being damaged when an ox or a cow bumped it. The front gable of the shelter was left open. The animal shelter often lasted for several winters.[28] Hay and straw from previously collected haystacks were fed to the animals in the winter. The animals were fed in a small fenced corral (grazhda) adjacent to their shelter. Very similar structures were built by poor peasants in parts of Western Ukraine, as documented by the illustration of a kolyba for oxen in Figure 101.

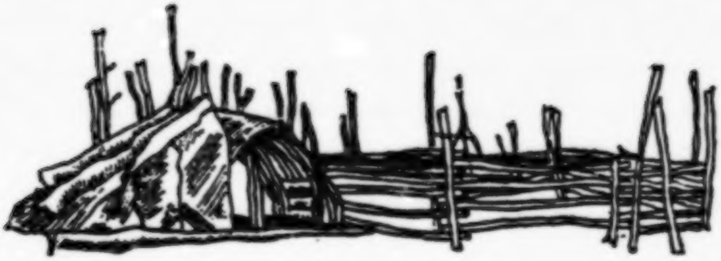

Figure 101: Kolyba with a fenced area for oxen. (Illustration for M. D. Mandybura, "Tvarynnytstvo," Boikivshchyna, IU. H. Hoshko, ed., Kiev: Naukova Dumka, 1983, p. 111.)

Chickens were valued for their eggs and meat. Chicks were kept under the bed, and if there was no coop, the chickens themselves would spend the winter inside the dug-out dwelling. In the summer, they were left to wander freely around the yard and in the garden.[29]

It was desirable to build a chicken coop to house the birds at night and in the winter. These structures, too, were generally built in the same slanted roof manner. Chicken coops were significantly smaller than dwellings, though in other respects they were very similar. They were excavated into the ground for added warmth and security. Roof rails were covered with straw and clay. Interiors of coops were empty except for roosts made of rails.[30]

D. Gardens

Gardens were a very important source of food for the settlers. Only those homesteaders who arrived late in the summer did not grow a garden. New immigrants to the prairies would sometimes plant a garden even at a temporary residence while the searched for their own homestead. In this way, they ensured food for themselves for the first winter.[31] In other cases, friends or relatives offered vegetables to those without their own gardens.[32]

Seeds were brought from Ukraine in many instances, or aquired by trading with neighbours.[33] The vegetables most commonly grown were potatoes, onions, garlic and cabbage. Beets, carrots, peas and beans were also relatively common. Turnips, pumpkins, corn and dill were also planted by some settlers, though the latter two species often froze before their harvest.[34] Flax and hemp were grown for their fibre.[35] Rye was the most common grain crop, though wheat and oats were also sown.[36]

Though seeding gardens in rows became common practice with time, the more archaic method of growing vegetables in patches (hriadky) was common in this period. Seeds of one species of vegetable were sown in an area approximately one meter square. Each patch was surrounded by a walking area, from which the plants would be tended. The size of the hriadka depended on the arm's reach of the gardener. It was designed so that the person could reach every plant from one side of another without stepping onto the plants themselves. If the hriadky were situated close to each other, a more or less rectangular garden would be divided up in checkerboard fashion, with a crosswork of perpendicular paths between the patches.[37] In other yards, the hriadky were not necessarily planted so close together. They were scattered about the yard wherever convenient for the gardener, sometimes separated by clumps of bushes or other obstacles.[38] In these cases, the hriadky were more circular or irregular in shape. The garden would take this irregular form if there was no time or opportunity to clear out a large area.

ENDNOTES

Addendum

A. Early Rural Architecture in Alberta

1. Frank Gilbert Roe, "The Old Log House in Western Canada," Alberta Historical Review, vol. 6, no. 2 (1958), p. 1.

2. Frank Gilbert Roe, "The Sod House," Alberta Historical Review, vol. 18, no. 3 (1970), p. 1.

3. Roe, "The Old Log House," pp. 2-7.

4. Roe, "The Sod House," p. 4.

5. Roe, "The Old Log House," p. 7.

6. Victoria Callihoo, "Early Life in Lac Ste. Anne and St. Albert in the Eighteen Seventies," Alberta Historical Review, vol. 1, no. 3 (1953), p. 21.

7. Col. Frederick C. Jamieson, "The Edmonton Hunt," Alberta Historical Review, vol. 1, no. 1 (1953), p. 26.

8. Roe, "The Old Log House," pp. 7-8.

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